# THE MICHIGAN FARMER,

## A WEEKLY JOURNAL OF AFFAIRS

## Relating to the Farm, the Garden, and the Household.

NEW SERIES. DETROIT, SATURDAY, APRIL 30, 1859. VOL. 1., NO. 18.



**The Michigan Farmer,**

**R. F. JOHNSTONE, EDITOR.**

**Publication Office, 130 Jefferson Avenue,**
*DETROIT MICHIGAN.*

The Michigan Farmer presents superior facilities to business men, publishers, manufacturers of Agricultural Implements, Nursery men, and stock breeders for advertising.

**Terms of Advertisements.**

Ten cents per line for each insertion when ordered for one month or less.

All orders with advertisements, should state the number of weeks the advertisement is to be published.

**Subscription.**

We will send one copy for $2,00; three copies for $5,00, five copies for $8,00, and ten copies for $15,00. No paper sent without the money in advance.

☞ We will also send the Farmer, and the Atlantic Monthly, or Harper's Magazine to any address for $4,00

Also the Michigan Farmer and the Horticulturist or Hovey's Magazine of Horticulture to any address for $3,50.


**CONTENTS.**



# The Farm.

### The flesh forming properties of certain crops.

It is noted that the north of England men and lowland Scotch possess a temperament and constitution very superior in many respects to the inhabitants of the midland counties, and this is attributed to their food. The northern man living on oatmeal and milk, whilst the midland and southern man lives on beef and vegetables. The fact has induced a comparison of the food, and it has been found that oats and peas have the property of affording much more flesh or muscular substance than any other. It is culculated that an able bodied man must have a supply of five ounces of flesh forming matter each day, and it is found that to get this five ounces, it takes of Wheat flour 2 lbs. 1 oz. ; of Oatmeal 1 lb. 13 oz ; of Rice 4 lbs. 13 oz. ; of Peas dry, 1 lb. 5 oz.; and of Potatoes 20 lbs. 13 oz. This statement will also show in some degree why oats possess so much more power to contribute working properties to the horse than any other grain.

### The Bow or propelling Whiffletrees.

Some two years ago, Mr. Freedom Monroe of Romeo, invented an improved method of harness for horses, for which he was awarded a premium at the State Fair. The plan provided for having the double or coupletree in front of the horses' breasts. Since that time we had heard nothing of the improvement, but we learn that after two rejections for informalities, and the delay of a year occasioned by his model being detained in the Express office of this city, he has at length got his patents, and he is now ready to sell rights. The improvements on this harness, as claimed by Mr. Monroe are, First, that it keeps the hame collar down in its place, and it is unable to work up and choke a horse, who has thus more power to draw than in the ordinary way. Second, the beam is not encumbered with whiffletrees, and in logging there is nothing but the chain to handle.

—Another shipment of plants from China, has just been made for the Patent office, among which are those of the tea shrub, camphor tree, and of the yangmae. A portion of the public grounds at Washington are set apart for their germination.

## STATE AGRICULTURAL COLLEGE.

SUGGESTIONS AS TO ITS MANAGEMENT.

BY THE EDITOR.

### The Members of the Faculty.

The Faculty of the College at the beginning of this term, which commenced on the 6th of April, was as follows :

REVD. L. R. FISK, A. M., *President, pro tem, Professor of Chemistry ;*

R. F. JOHNSTONE, *General Superintendent of Agriculture ;*

CALVIN TRACY, A. M., *Professor of Mathematics ;*

J. C. ABBOT, A. M., *Professor of English Literature ;*

HENRY GOADBY, M. D., F. L. S,, *Professor of Physiology, Entomology and Comparative Anatomy;*

C. ABBE, *Professor of Civil Engineering ;*

HIRAM HODGES, *Farm Director ;*

S. A. LANE, *Steward.*

### The Students.

The number of Students now at the College is eighty-two, and these are divided educationally as follows :

FRESHMEN.

| *Name.* | *Post Office.* | *County.* |
|---|---|---|
| Samuel S Benham | East Windsor | Eaton. |
| Charles H Bennett | Jackson | Jackson. |
| Augustus S Billings | Lansing | Ingham. |
| M H Beach | St Clair | St Clair. |
| Brady Backus | Grand Rapids | Kent. |
| James G Birney | Bay City | Bay. |
| Nathan Blakeslee | North Farmington | Oakland. |
| James Ross | Hudson | Lenawee. |
| W W Bowdish | Stockbridge | Ingham. |
| Issac N Branch | " " | " " |
| Hiram M Brown | North Plains | Ionia. |
| R T Bush | Dallas | Clinton. |
| James H Button | Farmington | Oakland. |
| Aug H Canfield | Mt Clemens | Macomb. |
| C E Carrier | Vandalia | Cass. |
| L I Castle | Corunna | Shiawassee. |
| F R Chase | Smyrna | Ionia. |
| Samuel Clute | Ionia | " |
| Wm R Cole | West Rives | Jackson. |
| Charles A Foote | Detroit | Wayne. |
| C Fox | Grand Haven | Ottawa. |
| Geo J Grovier | Mt Clemens | Macomb. |
| O B Gunnison | Dewitt | Clinton. |
| H Clay Hartwell | Hadley | Lapeer. |
| W Hatch | Schoolcraft | Kalamazoo. |
| Edwin C Hayden | Burlington | Calhoun. |
| C J Hill | Bengal | Clinton. |
| J Hull | Windsor | Eaton. |
| W S Humphrey | Sanford | Ingham. |
| L H Ives | Unadilla | Livingston. |
| Oliver Ireland | Sanford | Ingham. |
| Edward S Jewet | Niles | Berrien. |
| T J King | Rives | Jackson. |
| Edgar A King | " | " |
| Herman A King | Delta | Eaton. |
| N J Kinne | Williamston | Ingham. |
| A Knorr | Motville | St Soseph. |
| T H B Morehouse | Lansing | Ingham. |
| W G Nelson | Pontiac | Oakland. |
| John Pennoyer | Nunica | Ottawa. |
| W H Rayner | Mason | Ingham. |
| Orlando Russel | Centerville | St Joseph. |
| William Scott | Schoolcraft | Kalamazoo. |
| Sidney S Sessions | Ionia | Ionia. |
| Theron A Stavens | Stockbridge | Ingham. |
| Francis Storrs | Goodrich | Genessee. |
| John T Strong | Lansing | Ingham. |
| L Sullivan | Howell | Livingston. |
| Geo B Thompson | Albion | Calhoun. |
| S Vickery | Schoolcraft | Kalamazoo. |
| Webster | Detroit | Wayne. |
| H Clay Wisner | Pontiac | Oakland. |
| Ahijah Wixom | Farmington | " |

SOPHOMORES.

| *Name.* | *Post office.* | *County.* |
|---|---|---|
| Edgar J Abbot | Maple Rapids | Clinton. |
| Albert F Allen | Manchester | Washtenaw. |
| Chas B Anderson | Otisco | Ionia. |
| Adams Bayley | Big Beaver | Oakland. |
| Leonard V Beebe | Stockbridge | Ingham. |
| Henry D Benham | East Windsor | Eaton |
| E L Brewer | Bennington | Shiawasse. |
| Alpheus W Carr | Lansing | Ingham. |
| Albert J Cook | Corunna | Shiawasse. |
| Gilbert A Dickey | Marshall | Calhoun. |
| Alexander H Doty | Detroit | Wayne. |
| William F Dow | " | " |
| Jas H Gunnison | De Witt | Clinton. |
| Geo W Haigh | Dearborn | Wayne. |
| Chas E Hollister | Geary | Clinton. |
| Geo P Humphrey | Sanford | Ingham. |
| Charles J Monroe | Lawrence | Van Buren. |
| A E McComber | Detroit | Wayne. |
| A Benton Morse | Otisco | Ionia. |
| Albert N Prentiss | Marshall | Calhoun. |
| Alex H Scott Jr | Schoolcraft | Kalamazoo. |
| Wm A Thomas | Richland | Kalamazoo. |
| A J Thompson | Howell | Livingston. |
| Geo G Torrey | Birmingham | Oakland. |
| William S Tredick | Marshall | Calhoun. |
| Edward M Wisner | Pontiac | Oakland. |

JUNIORS.

| *Name.* | *Post office.* | *County.* |
|---|---|---|
| William M Greene | Lansing | Ingham. |
| W W Preston | Chelsea | Washtenaw. |
| Seneca N Taylor | Oakland | Oakland. |

### The Operative Discipline.

The object of the College being to combine a practical knowledge of work on the Farm as an acquirement, with education in the several sciences which have a relation to agriculture in the most comprehensive sense of the term, it is absolutely necessary that a certain discipline should be devised and carried into practice, and this has already been done, keeping it strictly within the provisions of the law of the State bearing upon that subject, which says that each student shall work, not more than three hours of each day. The students, therefore, are classified into three working parties, which are termed the *First, Second* and *Third Divisions*, each of which work three hours at whatever may be required by the Superintendent or Farm Director.

The regulations require that the first morning bell shall ring at a quarter past five, as a signal to rise and dress. At half past five, the bell summons the students to the Chapel for morning services, which consist in reading a portion of the Word of God, of singing a hymn, and a brief prayer by the President or a member of the Faculty. On the conclusion of these exercises the students repair to the boarding house, where at ten minutes before six they are summoned to breakfast. At a quarter past six, the bell rings for the first working Division to prepare for the field, and the students composing it at once repair to the dressing room, and put on their over alls, working boots and jackets, and report themselves to the Farm Director at the Barn, in time to be in the field with teams or implements, when the bell rings for half past six. This division works until half past nine, A. M.

At fifteen minutes past nine, the bell rings as a warning to the Second Division to prepare for the field, and the rules require that at the ringing of the bell at half past nine, the students shall be in the field ready to take the teams or the implements from the hands of the members of the first division whose place they supply. This Division works till half past twelve, at which time the students quit work, and are required to bring in their teams, and implements unless specially directed otherwise. At one o'clock the students are summoned to dinner.

After dinner the library is opened and the students there have an opportunity of seeing many of the newspapers and periodicals which are sent to it from all quarters.

At a quarter before three o'clock, P. M., the bell rings as a warning for the Third Division to prepare for the field, and at three o'clock the several teams and hands are again busy in field operations which continue till six. This makes a full day's work of nine hours from one third of the students.

On Saturdays, there are no recitations and the students are not required to work after dinner; the Third Division is therefore detailed off as belonging to the first and second.

From each of the divisions there are detailed certain students who have special duties assigned as their work. To one is given the care and feeding of the horses, to another of the cattle, to another the ringing of the bell, to others the bringing of the mail from the post office at Lansing, the building of fires in the College buildings, the carpenter work, the sweeping and keeping neat of the College buildings, and some other duties, taking altogether from the whole number of students nine, and leaving on hand for general operations seventy-one, which for the present are divided as follows :

| *First Division.* | *Scond Division.* | *Third Division.* |
|---|---|---|
| M F Beach. | Brady Backus. | Edgar J Abbott. |
| Charles H Bennett. | Charles A Foote. | Albert F Allen. |
| James A Button. | Wm M Greene. | C B Anderson. |
| A T Billings. | W F Humphrey. | L V Beebe. |
| Hiram M Brown. | Edwin C Hayden. | Adams Bailey. |
| James G Birney. | H C Hartwell. | E L Brewer. |
| James Ross. | W Hatch. | Albert J Cook. |
| W W Bowdish. | J Hull. | A W Carr. |
| Nathan Blakeslee. | Oliver Ireland. | A H Doty. |
| R T Bush. | L H Ives. | Wm F Dow. |
| Angus H Canfield. | Edward S Jewett. | G A Dickey. |
| Lemuel Clute. | Heman A King. | J H Gunnison. |
| C E Carrier. | Edgar H King. | Chas E Hollister. |
| L I Castle. | A Knorr. | G P Humphrey. |
| Wm R Cole. | N J Kinne. | Geo W Haigh. |
| F R Chase. | T H B Morehouse. | Chas J Monroe. |
| C Fox. | W J Nelson. | A Benton Morse. |
| O B Gunnison. | John Pennoyer. | A B McComber. |
| Geo J Grovier. | W W Preston. | A N Preston. |
| C J Hill. | W H Rayner. | Wm S Tredick |
| | Orlando Russell. | Wm A Thomas. |
| | Francis Storrs. | A J Thompson. |
| | Sidney S Sessions. | E M Wisner. |
| | William Scott. | |
| | John I Strong. | |
| | P L Sullivan. | |
| | Seneca N. Taylor. | |
| | Geo B Thompson. | |
| | S Vickery. | |
| | H C Wisner. | |
| | Ahijah Wixom. | |
| | Wm Webster. | |

For the purpose of giving a definite idea of the manner in which the students are employed, and also a satisfactory and comprehensive view of the work on the farm at the present season, it is thought that a relation of the operations of Saturday the 23d, will prove both instructive and of interest.

On the appearance of the students of the First Division for Saturday, O. B. Gunnison, A. H. Canfield, James A. Button, W. M. Bowdish and F. R. Chase were detailed to the teams, and four of them sent into the oat field, No. 7, two of them to plow, and two to harrow, and cover oats, which had been sown and partially covered the day previous. One team was kept for the purpose of drawing rails and stakes to build a fence round a lot which was to be surveyed off as a pasture and yard for swine.

Mr. Albert F. Allen was detailed to sow oats, had the high wind permitted it. H. M. Brown accompanied the team to load the rails. A. Bailey and S. S. Sessions formed a class to lay this straight fence with stakes and caps. J. G. Birney, N. Blakeslee and Geo. J. Grovier were a class to cut brush and pile it up ready to burn on field No. 13, a piece of recently cleared land on the south side of the river, which it is intended to burn and get into oats next week if the weather will permit. No. 9., which is sown with Mediterranean, Tuscany and Australian wheat, and which grew quite rank, there were left several trees as ornaments, and intended to render the prospect agreeable to the eye.—The intention was undoubtedly good, but unfortunately the high winds blew many of these trees over, and the heavy tops, and upturned roots make sad havoc with the corps. Trees when left thus, in heavy timbered land like that around Lansing, are always dangerous, and are never fit for shade or ornamental trees. They are only poles with bushy or scraggy tops at one end, and a mass of short roots at the other. They are not broad spreading, well developed trees which the eye delights to rest upon in the landscape.—All the old trees thus left have been ordered cut down, and those that have fallen were ordered to be cut, the logs to be piled up, and the brush to be carefully gathered, and got ready for burning. The class to do this work was James Ross, M. F. Beach, Lemuel Clute, C. Fox, Wm. R. Cole.

On the wheat field across the river, No. 12, which is sown with Soule wheat, the same disaster has happened to many trees left there; and there also we have found, although there is a heavy rail fence, that several cunning old mares, and lively colts belonging to our excellent neighbor Mr. Jepson, have been able to get upon the crop. A class consisting of L. V. Beebe, Charles B. Anderson, Watts F. Humphrey were detailed to cut stakes and thus strengthen the fence, Mr. Jepson having agreed to furnish as many good caps as would be wanted.

Along the river bank on the south side, it is esteemed necessary to lay a fence to protect the crops on the other side from the hogs, cattle and horses which are annually turned into the woods to browse, and range for food; the river in the summer season being low, and capable of being forded. During the first week of the term rails had been split and drawn for this fence by order of Mr. Hodges, the Farm Director, and a class was organized, consisting of E. L. Brewer, J. H. Gunnison, Geo. P. Humphrey and Alpheus W. Carr, to lay up this fence.

For the work in the garden, a class was organized at the head of which was a student, Mr. A. Prentiss whose practical acquirements and tastes in this department are of much service ; with him was sent C. J. Monroe, W. S. Tredick, E. M. Wisner, A. H. Doty and Geo. P. Humphrey.

Besides these classes there was one organized for the building of a rough shed for a temporary tool house, which had been planned some weeks since, but which is now almost completed. This class consisted of R. T. Bush, A. J. Hill, Orlando Russell, and Albert F. Allen, who found it was blowing too strong to permit him to go on with his work of sowing.

At half past nine all these were changed, and new classes in each department were arranged, one of whom, S. N. Taylor, surveyed the pasture intended for the swine and found it to contain two acres and thirty-two perches.

The whole system of work is thus narrated, and laid down for the purpose of calling attention to two important points in the management of this estate, namely the arrangement of a system of accounts for labor, also of the farm accounts.

It will be seen, first that the labor of each of the students was of a peculiar kind. Three yokes of oxen and one pair of horses were employed on the oat crop with the hands necessary to keep them at work, another horse team had been sent off the day before thirty-six miles to procure a load of seed oats. This labor was all properly chargable to field No. 8, and to crops. This same field, however, ought also to have another account opened with it under the head of real estate. During the week there have been classes of students crowded into it whenever the weather would permit, who were employed in burning brush heaps, logging, picking up brush, roots and grubs, sawing logs into railcuts, and in splitting and hauling rails to make and mend fences. All this labor did not belong to the crops, it was an improvement of real estate, and of course should be charged to that account. Again, there were classes engaged part of the week with sawing with a horse power, logs into wood for the boarding house, and in preparing piles of firewood. This labor should be a charge against the boarding house, as it is neither improvment nor crops.

It is of the utmost consequence that some system should be speedily adopted to arrange the accounts. At present there is no system—there are no books—there is no record—nor is there any plan which could be taken as a basis. The whole has to be planned and designed, and then it has to be carried out. For this purpose there should be a book keeper, for it will take one man's time alone to ottend to this business, and carry it out after it is arranged. At the opening it was designed that the Secretary of the Faculty should do this, but it will readily be seen that it is no part of that officer's duty, which in fact is an officer solely for the puapose of keeping a record of the transactions of that body, and has nothing to do with this part of the establishment.

It will also be observed, that to arrange and carry on this business with system, an account has to be opened with each student, in which he should be credited every week, fortnight or month with the sum of his labor. Whilst that labor at stated periods should be charged respectively to fields on crop account, or to fields on real estate account. Again the accounts of the Steward at the Boarding house, should be systematized in the same manner. Mr. Lane, the present efficient Steward, keeps an exact statement of every thing he receives and gives out. But as a matter of course, the farm will in the course of a short time be a source of his supplies, and then there must be a system by which the general accounts of each will be kept distinct and yet together—each forming a part of one establishment. The boarding house, it will readily be seen, will be the consuming market for a large portion of the crops of all kinds, dairy, orchard, garden, piggery, sheep-yard, cattle-yard, and grain and roots. Hence the great importance of having a set of books and a system of accounts, which will be suitable for such an Institution, at once simple in form and devoid of all complication.

Without some such plan at the commencement of the term, no useful results can be arrived at, and the Institution must go along blindly, and every man connected with it be liable to have injustice done him. Such is already the case; a very great amount of labor has been performed, a great portion of which has been sunk in real estate account, and there is no record of it, and no way of getting at it. Lands have been cleared for the State, the timber cut off, the logs burned, the stumps pulled out, the brush gathered and destroyed by fire, fences have been built, drains and ditches dug, but there is no account of the cost or of the value of the labor done. This is not the fulfillment of the design of the Institution, which was in some degree to keep a record of the time and cost of making each improvement. Again, no attempt at clearing should be made without a definite survey and actual measurement of the lot. If, as is proposed, fifty acres of timber should be felled next fall and winter, its limits should be accurately marked out before an axeman is permitted to touch a tree upon it, and then every days labor expended upon it should be accounted for.

### Crops.

On Thursday, the 21st of April, field No. 8, had got in such condition that the teams were put at work harrowing, and in the afternoon, Mr. Hodges and one of the students were engaged in sowing oats. Both clover

and timothy seed are needed immediately.—There is about 60 acres that must be seeded this spring, and part of it should have been sown before this date, but no seed is as yet on hand It has been ordered.

**The System of Accounts necessary.**

In this Institution there should be a general system of accounts, under the control of some proper authority, but more especially in charge of the Treasurer. This general system should include the whole of the expenditures and receipts; and the several departments of the Farm accounts, the Students' accounts, the Boarding House accounts, the Professors' salaries, should be subordinate to it. The checks of the Treasurer should all be drawn with reference to these General Ledger accounts; which should be made up from the several departments, at stated period, according to their nature. For the details, reference should always be had to the department under which the accounts were entered. The general ledger accounts might be classified as follows:

*General Expenditures.*

A. Salaries of Professors and assistants.
B. Boarding Hall.
C. Students' general account.
D. Farm department.

*General Receipts.*

E. From State appropriation.
F. From Students' accounts.
G. From Farm produce.

*A.* SALARIES.

There should be no necessity to open a set of books for salaries. If paid monthly, or quarterly, as they should be, the general entry at the stated term of payment, would of itself be sufficient. The amounts being fixed and not fluctuating.

*B.* THE BOARDING HALL.

The Boarding Hall accounts should be classified under the head of General Expenses, and divided as follows:

1. Groceries and stores.
2. Breadstuffs.
3. Butchers' bills.
4. Farm produce, including milk, labor, &c.
5. Furniture.
6. Salaries of help.
8. Fixtures and repairs.
8. Miscellaneous, if any.

These should be the titles of the Ledger accounts of the Boarding Hall. The several invoices should be filed, and paid by numbered certificates, drawn by the Steward, to be countersigned by such authority as the Board of Education may select, and kept as vouchers by the Treasurer. These certificates should be entered when drawn, on the Boarding House Day-book, by number, name and amount, agreeing in all particulars with invoice and with stub in certificate book, and should be entered on Ledger by their number, on the debtor side of the account of which they form a part; the invoices being the credits. The whole under the head of General Expenses should be balanced each month, settled, and the general report handed in to the keeper of the General accounts.

*C.* STUDENTS' ACCOUNTS.

There should be a Journal and Ledger kept, in which should be opened a monthly account with each student by name. The debtor side should consist of the charges accruing against him for board, penalties, breakages, &c., and the credit side should consist of his labor account, and the payments made for board. The books would only require to be balanced at the end of each term, and the general report and balance sheet then made, and carried to the General account.

*D.* THE FARM DEPARTMENT ACCOUNTS.

The accounts connected with the Farm are the most complicated of all, and yet they can be simplified and kept, as accurately as any; but to do this it requires fixtures, measures, scales, books and blanks, none of which are on hand as yet.

The Farm books should consist of General Ledger accounts, which should be classified as follows:

1. Separate accounts with each lot, from No. 1 to No. 15.

These should have each two accounts: one having reference to real estate expenses, and the other to crop expenses and their returns.

2. A Real Estate, or general improvement account.
3. A Students' labor account.
4. An account with boarding Hall.
5. Implement account.
6. Live stock account, viz:
   *a.* Work teams,
   *b.* Milch cows,
   *c.* Swine.

At present there is daily expended on many of the lots a large amount of labor, which is not productive of revenue. It is sunk in the improved value of the land itself, and yet it is important that this should be kept on record. No record of this investment by the State is to be found. The cost of the crops should appear by itself, as the revenue from the investment in land, and the return for labor and seed. Hence I advise that two accounts should be opened with each field, for the present. After the fields are permanently improved, there will be no need of any except a general real estate account.

The real estate, or general improvement account, is that in which the whole of the charges and payments should be gathered together to form a part of the general account in this department, to be finally carried to the account of permanent investment.

The Students' labor account should be charged weekly, and for the purpose of classifying it, I have devised a few blank forms, copies of which will be forwarded. These forms, however, are made out without reference to the classification of the Farm accounts. The Ledger account would read, debtor for a certain number of hours' work each week; and be credited by the several accounts to which the work would be charged.

The account with the Boarding Hall would necessarily be one difficult to arrange and keep, without a constant supervision, as in a general sense it would be a record of the exchange or barter of the products of the farm for the board of the labor, and in this sense it would also be the selling market for these products.

The Implement account is a clear money expense account, in most instances, and would have to go into general account, to be met with in the balance sheet of this department.

The Live Stock accounts are part expense accounts, and part revenue. The work teams would have to come into the general expenses like the implements; the milch cows and swine should be charged with their keeping, and their productions measured, valued and credited.

This set of books could not well be balanced more than once a year, when the whole could be carried by a balance sheet into the General accounts of the College, which I have above mentioned and described.

The great difficulty attending the opening and arrangement of such a system at present arises from the fact, that it is impossible now to stop in the middle of the spring work, when every hand is employed in forwarding the getting in of seed, or in getting this rough, heavy land into condition to yield something for this season. All these arrangements by right should have been perfected before the term commenced, as well as many others, which I shall have occasion to refer to in the the future, and the lack of which renders the practice of a true economy impossible, with regard to the future, at least for the period of one term.

I would recommend, however, that this system should be made to commence with the month of May, and that an experienced bookkeeper should be employed to open the several sets of books. Eventually, this division of labor, should come under the supervision of the teacher who would be employed to give instruction in this essential part of the education of the practical farmer, and these several sets of books could be kept by the students. But they should be opened, if opened at all, by a man of experience, and who would have some judgment as to the work he was called upon to perform.

*Agricultural College, Lansing, April* 25. 1859.

## Properties of Saliva.

BY HENRY GOADBY, M. D., F. L. S.
PROFESSOR OF VEGETABLE AND ANIMAL PHYSIOLOGY, AND ENTOMOLOGY, IN THE STATE AGRICULTURAL COLLEGE OF MICHIGAN, AUTHOR OF A TEXT BOOK OF VEGETABLE AND ANIMAL PHYSIOLOGY, ETC.

This subject was incidentally alluded to, in the article lately published in this journal on Nutrition; it is now proposed to examine it specially. Three classes of animals appear to throw considerable light on it, the Reptiles, amongst the Vertebrate, and Spiders and Insects amongst the Invertebrate animals. It has been already noticed that insects, many of them, have as many of these glands as the higher animals, not excepting man himself; this fact of itself is significant, and would, without further evidence, lead to a suspicion that they possess distinct properties, otherwise one pair would suffice.

All the insects organized to prey on living animals, or plants, are well supplied with these glands, and to the full number. The predaceous and sanguinary spider, offers an admirable illustration, for this creature kills its victim, whether it be a fly, or one of its own species, as the rattle snake does—by a single bite. Every one must have noticed that the bite of those insects which are parasitic on man, invariably produces consequences of more or less severity, depending upon nervous temperament, and peculiar idiosyncracies. Neither is this all, for the bite of each insect is characteristic, and may be distinguished from each other; thus the bite of a bug, differs from that of a flea, and the mosquito from both. An insect which prevails in the autumn (so like the common house fly, that none but an Entomologist can detect the difference), called *Stomoxys*, (sharp mouth) bites with a cruel severity; so too the beautiful *Chrysops cæcutieus* (golden eye), but neither of these present a wound that can be mistaken for the other. These remarks apply also to the Hemipterous order (tree bugs), who although designed to consume vegetable sap, never miss an opportunity of feasting on human blood, as every Entomologist knows to his cost; but from the *Notonecta glauca* (boat fly), to the gigantic *Belostoma grandis* —both aqnatic—no two of them produce the same effects. Who has not noticed the extreme irritation, and pitiable agony that the poor horse suffers, while tied up in the summer's sun, exposed to the assaults of a whole army of blood-suckers? What must not the patient ox suffer, when, maddened by the attacks of the ferocious *Tabinus bovinus*, he quits his food, and courses over the plain, blind with fear and frantic with agony? Nay, the sound of his enemy's voice produces a universal tremor, and his ponderous frame becomes the seat of undisguised terror. He lashes his tail, foams at the mouth, and runs wildly, in his vain attempts to fly from his tormentor. But the suffering of our domestic cattle, or even of ourselves from the bite of insects, falls into isnignificance when compared with the consequence resulting from the attacks of the Abysinian Zimb, so eloquently described by Bruce. According to this authority, men, women and children fly at the sound of this much dreaded insect; the inhabitants leave their dwelliags, with all their contents, careful only of their own preservation, and the cattle run as if they were mad.

If a carnivorous and predaceous beetle bite another insect, it dies as surely as a man would if bitten by a rattle snake; the question arises, whence the cause of these severe injuries accruing from the bite of a contemptible insect? The instruments employed to make the punctures, are much too minute and delicate to be held accountable for the misery subsequently endured, which, in the case of some insects extends over a period of several days; surely, then, we are justified in refering these mischiefs to innoculation by the saliva. We know that the blood of animals, and the sap of plants, is too thick to be taken into the interior of insects, it requires diluting, and the saliva is copiously used for this purpose. But in addition to this property, saliva has evidently another, which is at least as important—it acts as a poison, and destroys the vitality of tissues. In confirmation of this fact, it is only necessary to watch a caterpillar feeding upon a leaf of any kind; kill, and open it immediately, the food found in its crop is no longer of the color of the leaf to which it belonged, it has become of a dull, dark green—appearing as if it had been well boiled, and yet it has only passed through the mouth, and come in contact with nothing but the saliva; in all respects it will be found to compare with the grass found in the third stomach of the herbivorous quadruped. The organization of the stomach of all animals is such that it has no power over living matter everything submitted to its action, must have lost its vitality—were it otherwise the organ would act upon, and digest itself—a contingency that always occurs in death, where some parts of the stomach are found acted upon and digested by the gastric juice. For the same reason those parasitic insects that feed upon the blood of other animals, at the moment of puncture, pour in a large supply of saliva, for the twofold purpose of *diluting* and *killing* the fluid, and the like principle obtains in relation to plants. The bite of many insects raises tumors, sometimes of large size in man, and other animals, arising from innoculation by the saliva; the same effects produce large excrescences in p'ants, which necessarily become permanent: from these facts, then it is not too much to claim for the saliva a poisonous quality. Again, if a dog, cat, fox, hog, cow, racoon, &c., all in sound and perfect health, bite a man, hyrophobia supervenes, and he dies:—how is this to be accounted for? If either of these animals had contracted this formidable disease, we might then understand it, notwithstanding that many persons have been bitten by dogs confessedly rabid, and no bad consequences have ensued, although they had not been cauterized or in any way treated by medical appliances.—From this it appears that hydrophobia *may* result from the bite of a sane dog, cat, &c.; and no disease whatever occur from the bite of a *mad* dog. The very worst case of this shocking disease that has occurred for many years, was occasioned by the bite of a cat in perfect health! So too, one man bites another, and the bitten man dies of hydrophobia: three such cases have occurred in the city of New York, within the last eight years.

The class of Reptiles appears to furnish a solution of the difficulty; amongst them, they have all the salivary glands found n other animals, but none of them possess more than *one pair*. Sometimes the sub-maxillary glands are alone found; another reptile displays only the sub-lingual; whilst yet a third order has the parotid glands. The Boa Constrictor (*Python tigris*) formidable as he is, has no teeth of sufficient capability to enable him to destroy his prey by a bite; he therefore depends upon his terrific muscular power, for the accomplishment of this end: he coils around his victim, and then powerfully and energetically contracting the muscles of his body, breaks every bone in its skin; the sturdy bull, and the more powerful buffalo, alike succumb to this insidious, relentless foe. Having destroyed his prey, he proceeds to swallow it, but before doing this, he licks it (his tongue being covered with saliva) all over, this has the effect of instantly reducing the entire mass to a state of incipient decomposition. Now this proceeding of the Boa, and its manifest effects, clearly demonstrates *another function of the saliva*. We will now consider the phenomena in relation to the poisonous serpents, whose bite is known to be fatal to all animals. The teeth with which they inflict their wounds, are known as *poison-fangs;* their interior is hollow, and the canal terminates near the apex of the tooth. These teeth are, in reality, the evacuating ducts of the parotid glands, they have no other outlet but through these channels alone, nor have they occasion for any other, for so virulent is the poison, that decomposition supervenes immediately that life ceases. This fact leads directly to the inference, that it is the secretion of the parotid glands which affects, or destroys life in animals, and the vitality of plants; in the higher classes, all those creatures whose bite *may* result in hydrophobia, have parotid glands, and if at the moment of incision the incisor teeth be covered with their secretion, death appears to be inevitable, and this explains why a dog in sound health, communicates this dreadful disease. On the other hand, a rabid dog may bite at the time his teeth are covered with the secretion of the other glands, whose function appears to be to act, *not on living*, but only on *dead* matter—consequently no evil occurs.

Spiders, like the poison snakes, have but one pair of salivary glands, and these, from their position, are more nearly *parotid*, than can be found in any other invertebra'e animal; the effects, too, are precisely similar, as an animal is no sooner bitten than he almost instantly dies. In the fierce and sanguinary combats of two spiders, which the author has witnessed many times, it is curious to observe how each seeks to bite the other on the under side of the body, where they are most vulnerable, and as soon as this be accomplished, the bitten spider's body swells up prodigiously and instantly he dies. It has been asserted that the bite of the larger species (Tarantula, and bird-catching spider) is fatal to man, but no sufficiently authenticated case appears on record, however, to establish this fact; that the bite should prove very troublesome, admits of no doubt, and the patient may possibly be detained for a few days with illness, but beyond this, nothing is positively known. The larger spiders of this country have been said to produce fatal results by their bite, but these accounts have no other authentication than newspaper reports.

None of the salivary glands are placed in the head in insects, consequently there is no analogy of position, it is quite evident that they possess the function however in an eminent degree. The pain and suffering caused by the bites of insects, no less than the peculiar and characteristic exhibition resulting from the wounds inflicted, are all referrable to the innoculation of a poison:—*more blood has been killed than the insect could consume;* the creatures being insignificant in size, absorption takes place, and there it ends: but who can say that if the mosquito were as large as a moderate sized dog, its bite would not be as fatal as a rattle-snake?

There cannot be a doubt that the principle so plainly enunciated in the Reptiles, is carried out in all its integrity, in the other classes—the Spiders, and the Insects, only confirm what they (the reptiles) so manifestly teach us: but more than this is true, viz., that the same remedy which will save life from the bite of a poisonous snake, will, if promptly applied, cure the bite of a mosquito, or other insect—ammonia.

Frank Buckland, son of the late Revd. Dr. Buckland; the celebrated geologist, was innoculated with the saliva of the hooded snake—Cobra de Capello—whose bite is more instantly fatal than that of any other reptile; fortunately he knew the only remedies that could save him, and rushing into a chemist's shop, seized a bottle of hartshorn, and dashed a quantity of it into a tumbler, to which he added so little water that the ammonia burnt his mouth; in a few minutes he took another such dose, equal to an American pint of ammonia, and afterwards four large wine glasses of brandy, none of which, under the influence of the poison, affected him in the least degree, but it restored him from the distressing symptoms which had already appeared, and effected a speedy cure. Brandy, or any other form of alcohol, energetically administered, and in large quantities, is the only cure (save hartshorn, which is not always at hand) for the bite of a rattle snake, and while the poison is active, it is impossible to produce intoxication, even in a man who has never partaken of spirits before.

# MICHIGAN STOCK REGISTER.

## HORSES.

**Foaled** on the 12th of April, a bay horse colt by Stone Plover, out of a dam named Boston Filly, sired by Billy Boston, he by Boston.

### Disposition and Temperament of Animals, as Affecting their Keeping and Fattening Qualities.

Any one of the least observation, must have noticed the great difference there is, in different animals, with regard to their keeping and fattening propensities. While some are easy keepers and take on fat readily—are always sleek and fat—others are hard keepers, raw boned, lean and lank; and it seems almost impossible to give them enough food to keep them in order, much less to fatten them. This difference is attributable, mainly I think, to the different dispositions and temperaments of these animals.

A horse of a wild and vicious disposition and nervous temperament, that will bound away with a snort whenever you approach him, that is constantly champing the bit and chafing in the harness, will be a great consumer and unprofitable, at least, to the farmer.

A steer, that will not allow one to approach and handle him without showing a disposition to kick, or push with his horn, that is restive under restraint, frightened at the least noise, would make a poor subject for the shambles. A pig, that is constantly squealing and trotting round his pen or yard, boring holes in the earth, kicking up behind every time he performs this sub-soiling operation; grabbing an ear of corn and running half a mile before he eats it, had better be killed outright, and his carcass fed to his fellows of more amiable dispositions.

These animals are great gormandizers, their food is not readily assimilated, and a vast amount of it is necessary to supply the wear and tear of their vicious dispositions, and nervous and excitable temperaments. In selecting animals for breeding, or for fattening, those only of mild, peaceable and quiet natures should be selected; and then great care should be taken to cultivate these amiable qualities; for, after all, much depends in this respect, upon the treatment we give our domestic animals. While one person, by kind treatment, may so attach his animals to him, that they will readily allow him to approach and handle them, to lick the salt, or eat the proffered nubbin of corn from his hand, and really seem, by their actions, to appreciate this kindness; another, by harsh treatment, by kicks and curses, instead of salt and nubbins, will so alienate the affections of these same animals as to make them appear of very different natures.

These remarks will apply with equal force to the human species. A man who is perpetually worrying and fretting, who looks upon the dark side of life, and takes things by the rough handle, who is of a nervous and excitable temperament, whose countenance is expressive of anxiety and discontent, one look of which is enough to sour all the cream of social enjoyment, and curdle every spoonful of the milk of mercy and forbearance, is always lean, gaunt and cadaverous, and invariably, a great eater; while the good natured, jolly hearted, rosy cheeked, rotund man, eats light, laughs and grows fat over the follies and foibles of mankind.

J. S. TIBBITS.

*Livonia, April*, 25, 1859.

**Cattle Sale.**

We have received a copy of the catalogue of the second annual sale of cattle owned by Ezra Cornell, of Ithica, New York. Mr. Cornell lets out his bulls to the highest bidders. In the preface, Mr. Cornell remarks that it is unquestionable that a cross of the Shorthorn improve the quantity and quality of the milk, and from a recent extensive correspondence with many dairy men in his country, he feels certain that the average production of butter from the common cows uncrossed, is only 140 pounds per year, in the best dairies, If this be correct, what must it be where the worst ones are in operation? Mr. Cornell has also some well bred Devons, and some choice, well bred Berkshire pigs.

# The Garden & Orchard.

## Transactions of the American Pomological Society.

REPORT OF THE STANDING FRUIT COMMITTEE FOR MICHIGAN.

NUMBER ONE.

Dr. Underwood, of Adrian, in forwarding his report, as Chairman of this committee, introduced it with the remark that "he has seen nothing to indicate that he was to appoint other members of the committee, and he therefore sends his answers to the questions propounded."

In reply to the query "what are the best six varieties of apples for an orchard of one hundred trees, for family use," he gives the following list:

| | | | |
|---|---|---|---|
| Early Harvest | 10 | Belmont | 15 |
| Late Strawberry | 10 | Yellow Belflower | 30 |
| Gravenstein | 15 | Esopus Spitzenburg | 20 |

It was donbtless the object of the querist to elicit information, not as to what are absolutely the best six varieties in each locality, but what are the best six furnishing a succession, as far as possible, during the year; a consideration of the first importance in a family orchard.

Respecting the first variety in the above list, there can be but one opinion, as it is confessedly the best of its season, and among the very first to ripen in this climate. It, however, cannot readily be kept beyond the latter part of August, and occasionally disappears before that time. This would leave nearly or quite a month, during the very height of the fruit season, unprovided for; as the Late Strawberry and Gravenstein, which are next on the list, do not commence to ripen till near the close of September: and as they cover nearly or quite the same season, the propriety of introducing both in so limited a list may well be doubted.

Gravenstein is generally conceded to be a fruit of the first quality, and the tree is one of the most beautiful and vigorous we have; but Late Strawberry, although a fine grower, is less desirable in this respect, while the fruit is less in size, less beautiful, and less desirable in quality. It would seem, therefore, to have been more appropriate to substitute for this one of the August and September fruits, of which there is a great variety, and among which are some of the highest value, and well adapted to fill the hiatus existing here.—Among those adapted to this purpose, we would name the Golden Pippin of Michigan, (which will probably prove to be Lowell,) American Summer Pearmain, Benoni, Red Astrachan and Early Joe; all of which are well known as desirable varieties for this State, although the last can only be recommended as an amateur fruit.

The Belmont, which is the fourth variety on the list, seems to have been adopted upon its reputation elsewhere, as it is almost unknown in many portions of the State. It is rarely shown at our State Fairs, and seldom, if ever, appears in our markets. At a meeting of the Standing Fruit Committee of the State Horticultural Society, held at Detroit during the Agricultural Fair of 1857, this fruit was recommended as among the best twelve, giving a succession for general cultivation in this State. It was inserted chiefly upon the recommendation of the Chairman, (H. G. Wells, of Kalamazoo,) with whom it is an old acquaintance. In the grounds of the writer, it has borne several years. The first crop was quite a full one, and the fruits were very large and fair, and exceedingly beautiful, and the flavor was all that could be desired; but fully one-half the crop rotted upon the tree before maturity. The subsequent crops have been rather moderate ones, and for the most part, so cracked and scabby as to be almost worthless. Soil, a sandy loam—subsoil clay.

The writer knows of no other bearing trees in this region of country.

Another objection to the adoption of this fruit in this connection, is that it does not come to maturity soon enough to follow the Gravenstein, which in this region, is usually past its season by the middle of October, while the Belmont will hardly be fully mature before the close of November.

It would, therefore, appear preferable to adopt for this place, the old, well known Fall Pippin, which will begin to mature its fruit about the first of October, and will last till February, and sometimes, even till April.—Throughout the greater portion of the State, it is believed to be a good bearer and a strong grower, while the quality of its fruit, for all purposes, is second to none of its season. In the prairie region it is said to be unproductive, and this may, therefore, be true of some portions of this State, but on the oak openings and timbered lands of this section, it is above reproach in this respect.

The next variety on the list is Yellow Belflower, a very excellent fruit for all purposes, but one which is said to fail in some sections of the State. It is also a very tender fruit, requiring the most careful handling, to prevent serious injury in the process of gathering and transportation. These objections, however, might and perhaps should be waived, were it not that we have such a fruit as the Rhode Island Greening, which possesses all the valuable qualities of this, with the additional one of keeping sometime longer, while it bears handling and carriage remarkably well. Throughout the greater portion of the State it is believed to be entirely successful.

Esopus Spitzenburg, the last variety upon the list, is beyond question, one of the first of our American fruits, and has become a standard by which others are compared: yet there are reasons why it should not occupy a place on a list so restricted as this. It is inserted as the longest keeper of the list, and therefore, to meet the necessities of the case, it should be susceptible of preservation till June or July without especial care. In practice, however, it will be found difficult to keep it beyond April, leaving a hiatus of a month, before the summer fruits are in season, and one of two, or perhaps three months, before the maturity of the earliest apples. Either the Yellow Belflower or the Rhode Island Greening, which was proposed in its stead, may be kept till March, when such long keepers as Roxbury Russet and Red Canada will be in condition for use, and in a good cellar, may be kept with little difficulty till June or July. The former is an excellent variety for all purposes, if kept from the air to prevent shriveling, but less profitable than the latter, which is a very hardy, prolific, beautiful and agreeable variety for the dessert and for market, but unfit for cooking. The Red Canada is mostly known in this region of the State, as Steel's Red Winter. In Ohio, it is called Richfield Nonsuch, and in the eastern States it frequently takes the name, Old Nonsuch.

It will be obvious to all, that the orchard of one hundred trees, contemplated by these queries, will be, when fully in bearing, far more than sufficient for the wants of a single family. It therefore becomes necessary to consider the adaptability of the varieties to the market, as well as to the wants of the family.

There is a large class of varieties, of the finest quality, which from the habit of the tree, its unproductiveness, or from the small size, unattractive appearance, or extreme tenderness of the fruit, would be unprofitable for the market, though admirably adapted to the wants of the family. In so small a list, these are necessarily excluded in favor of others, possessing these desirable qualities in a less degree, but combining instead, the essential market qualities of productiveness, size, beauty and firmness.

T. T. LYON.

*Plymouth, April, 25th, 1859.*

## Science of Gardening.

According to the usual acceptation of the term, the roots of plants do not emit excrements; yet it is quite certain, that in common with all the other parts of a plant, they emit matters differing in their amount and composition. The earth in contact with the tubers of a potato fully ripe contains mucilage, and has the peculiar odor of the root; that in contact with the roots of peas is also mucilaginous, and smells very strongly of that vegetable; and the freshly-upturned soil where cabbages have been growing, always smells offensively.

In addition to this, every gardener knows that the vigor and luxuriance of a crop are influenced remarkably by that which immediately pre-occupied the ground on which it is growing; and this does not arise entirely from the previous crop having robbed the soil of constituents required by its successor, but from that crop having left something offensive. Thus, the cabbageworts will not grow healthily upon soil where the immediately previous crop was of the same tribe; but if the ground be pared and burnt, they will grow luxuriantly. And the same occurs to ground exhausted by strawberries, if it be burnt and manured, strawberries will grow as vigorously as upon fresh ground; but they will not do so if manure only be applied.—It has also been observed that the roots of plants placed in water give out their characteristic flavor to the liquid; but on this, as evidence that they emit excrements, no great reliace can be placed, for some of the roots during removal from the soil, must be wounded.

The fact that the roots of plants do give out peculiar and varying matters to the soil which sustains them, aids to explain why one rotation of crops is superior to another, as well as why fallowing is beneficial.

Fallowing gets rid, by decomposition, of any offensive excrementitious matters, as well as accumulates that which is desirable to plants; and one crop succeeds better after some predecessors than others, because their exuviæ are more salutary.

These facts are all explicable by the supposition that roots emit into the soil various excrementitious substances. Let us next inquire whether they do so has been substantiated by direct expriment.

M. A. P. De Candolle, in his "Vegetable Organography," says that "these excretions of roots have been particularly seen by Bruemans;" but we are not acquainted with his researches. MM. Bacquerel and Macaire found when barley and other grain were made to vegetate in pure chalk, acetate of lime was formed in it, evidently by acetic acid (vinegar) being emitted by the young roots, and this combining with the lime of the chalk.—(*Ann. de Chimie et de Phys.* iv.)

M. Braconnot washed the soil in which the poppy (*Papaver somniferum*) had grown and obtained from it a considerable quantity of acetate of lime.—(*Ibid.* lxxii.)

Mr. Lymburn says, "On lifting up a bed of two-year seedling Scotch Firs, or two-year seedling Spruces, the ground around the roots is filled with the excrement. In the Scotch Fir it assumes a white color; in the Spruce it has a yellow color; and in both is fibrous. I have found in practice, that, in sowing seed-beds, or transplating trees into lines, Larch sown or planted after Spruce, have nearly doubled the size of those planted after Larch at the same time, and from the same lot of seed or seedlings."—(*Gardener's Magazine*, vi., N. S.)

Professor Johnston, from a series of deductions founded on chemical analyses, concludes by stating that they satisfied him "that the roots of plants do possess the power of excreting some of the substances which are held in solution by their sap on its return from the stem; and which, having performed their offices in the interior of the plant, are no longer fitted, in their existing condition, to minister to its sustenance or growth. The excretory power is not restricted to the emission of inorganic substances. Other soluble matters of organic origin, also, are permitted to escape into the soil—though whether of such a kind as must be injurious to the plant from which they have been given out, or to such a degree as *alone* to render a rotation of crops necessary, neither reasoning nor experiment has hitherto satisfactorily shown. All that we know with certainty is in favor of the opposite view. Mr. Gyde watered bean plants, till fully ripe, with water containing the matter excreted from the roots of beans; and these plants were slightly better in appearance than other bean plants watered during the same time with rain water only. The excretions of the bean's roots, therefore, do not seem to be injurious to the bean."—*Transac. Highland Soc.* 1845. *Johnston's Lectures on Agrtcultural Chemistry.*

Liebig is clearly of opinion that the roots of plants throw out excrements. He says, "The experiments of Macaire-Princep have shown, that plants made to vegetate with their roots in a weak solution of acetate of lead (Goulard's extract,) and then in rain water, yield to the latter all the salt of lead which they had previously absorbed. They return, therefore, to the soil all matters unnecessary to their existence. Again: when a plant, freely exposed to the atmosphere, rain, and sunshine, is sprinkled with a solution of nitrate of strontia, the salt is absorbed; but is again separated by the roots, and removed further from them by every shower of rain which falls upon the soil; so that, at last not a trace of it is to be found in the plant.—*Daubeny.*

"When bulbous plants, such as Hyacinths, are allowed to grow in plain water, this gradually acquires a brown color. It, therefore, cannot be denied that excrements are actually given off by plants, although, very possibly, they do not produce them in the same degree. Through the expulsion of these matters unfitted for the plant's nutrition, yet containing a large proportion of carbon, the soil receives again with usury the the carbon which it had, at first, yielded to the young plants as food in the form of carbonic acid. The soluble matter thus acquired by the soil is still capable of putrefaction, and then furnishes renewed sources of nutrition to another generation of plants: it becomes humus."—*Liebig's Chemistry applied to Agriculture, &c*, 3rd Ed.—J., *in Cottage Gardener.*

### The Peach on Plum Stocks.

J. J. Thomas, in the *Country Gentleman*, states that the tendency of grafting the peach on the wild plum, is to render the wood hardier and more able to withstand the cold of winter. The cause of this is, that the plum being of slower growth affects the peach, and causes a slower growth, and thus induces more of a dwarf habit, causing the peach to ripen its wood earlier in autumn. The difference, however, between trees set on plum stocks, and those growing on their own, is very slight.

☞ The fruit "still lives," and up to this time there never was a better promise, in this region, for an abundant crop of all kinds. We think all danger from frost is now over.—*Kalamazoo Gaz.*

## HORTICULTURAL NOTES.

### Grafting Wax.

Take four parts resin, two of beeswax, and one of tallow; melt the whole together; let it simmer five minutes, stirring it during the time with a "sharp stick."

*A new Grafting Wax.*—Take two ounces of common resin, melt it slowly over a fire, being careful not to heat it so much as to make it throw off its spirits of turpentine. When it becomes clear as syrup, add a little less than one ounce of alcohol, mix well, and put in a bottle at once, and cork tight. Alcohol is to be added sufficient to make the mixture liquid. When applied to trees, it hardens at once, forming an air tight covering.—This may be used as a composition for wounds made in pruning. Downing's gum-shellac is valuable for this purpose. This preparation is made by dissolving a quantity of the gum in a quart of alcohol, so that the liquid shall be of the consistency of paint. Apply this to the wound with a common paint brush, or with a sponge; always paring the wound smoothly, first, with a sharp knife.—H., *in H. N. Journal.*

### Currants and Gooseberries.

A good authority recommends that about two inches in depth of the soil for about three or four feet in diameter, should now be drawn away from around the stems of gooseberry and currant bushes, and that the cleared places should be sprinkled with soot and wood ashes, and the earth then returned with the back of the rake. This will aid in preventing the attacks of the caterpillers, and also act as a very strong manure for the trees.

### Layering Roses.

It is always desirable to have our choice roses on their own roots, as soon as possible. Scarce fine roses are generally propagated by nurserymen, on wild stocks or common stocks, which are generally troublesome, and frequently the head is killed and the stock or its wood and branches from it are left. Of late years the great rose stock has been the Manetti, which does not sucker, as the wild rose does. But even with it there are objections. There are three ways of layering roses.—The most common method is by taking a shoot of last year, cutting an upward slit in the wood, up to a joint, the tongue of the slice being on the upper side of the bend; the branch is then bent at the cut, pegged into the ground, and covered with earth. The second method is termed the Munro method, from the name of the gardener who first practised it: the branch is pierced and slit up to the joint with a sharp knife, a small wedge of wood inserted in the slit, and the branch bent at this joint, and buried and pegged down. The third method is by piercing the branch below the joint with holes made by a large awl, and making the bent where they are. The holes remain open until roots are sent out and formed.

### Training Pelargoniums.

To form a well shaped pelargonium needs skill and experience. The training operation should commence when the plant is quite young. Supposing, then, it is a nice, healthy young plant, with one stem; that stem should be stopped by nipping off the centre bud. It will send out three or four side shoots. As soon as these will bear it, tie them out horizontally, or flat across the pot at equal distances. This must be done carefully and by degrees, or they will slip off close to the main stem. When they have advanced a few inches, in the new position, stop them again: each shoot will send out two more. These also should be tied out the same as the firs. These also should be stopped as soon as they have acquired a certain height. Keep the shoots equal in length on every side, and the centre shoots a little above those at the side; and the specimen will be symmetrical, and when in bloom will look like a globe of flowers. When the cultivator cuts his plants down after the wood is hardened, he should take care that the branches forming the frame work of the plant are left so as to continue the shape of the plants.

## Our Forests—Their Importance.

The preservation of timber in the United States is becoming a subject of vast importance as affecting climate, agricultural products and the mechanic arts. In some portions of the Eastern States, which were originally covered with dense forests of valuable trees, timber is already quite scarce, and every year becoming more so. It is still abundant in the North-western States; but there, the same management is rapidly producing the same result: the unsparing ax is busily engaged in its work of destruction, settlers seeming eager to get rid of the wood as rapidly as possible, and valuing their farms in proportion to the number of acres cleared. Consequently the same result may be expected as at the East, and the next generation will probably witness the same scarcity of timber and the same baneful effects from its absence that are now felt in other portions of the country.

As for the vast region stretching from the Mississippi, or even the Wabash, to the Rocky Mountains, it is well known that immense tracts are entirely destitute of trees, and it is perhaps safe to say that less than one-tenth of the whole district is timbered land.

Aside from the intrinsic value of wood and timber for the purposes of domestic economy, some interesting considerations arise from this improvident destruction of the treasure lavished upon the eastern portion of the continent by the hand of Nature.

It will hardly be denied that sterility, or at least a great depreciation of the soil, has followed the total destruction of timber wherever it has occured on a large scale, in connection with tillage, particularly of those countries situated south of the 40th parallel of latitude—Syria, Persia, the North Coast of Africa, Spain, once fertile countries, according to history—might be adduced as instances.

A little reflection will convince us that a total destruction of woods and forests could hardly lead to any other result: water is an element that is absolutely indispensable to vegetable life. It is always within the power of man, by proper drainage and deep cultivation, to correct the effects of superabundant moisture; but rarely can he supply the want of it by artificial irrigation, except in a very unequal manner, far inferior to that afforded by the clouds, those great natural reservoirs, or by watering; a very laborious process, necessarily confined to small patches of ground.

Now it is well known that woods have the property of attracting electricity and of making clouds discharge their contents, particularly where they exist on elevated lands. Trees, by their shade and the leaves they deposit on the soil, prevent the action of the sun from drying the soil too rapidly, and the moisture is retained to be given slowly and beneficially to the adjoining lands. But this is only a part of the valuable agency of trees in agriculture; they act as natural wind-breakers, moderating its violence to a surprising degree, and preventing its carrying off the moisture of the earth.

In those parts of our country—Fond du Lac—which are timbered, winter wheat is an almost certain crop; not from the superiority of the soil over that of the prairies—for the latter are equally fertile—but simply from the protection afforded against the wind by the surrounding woods; the snow remaining a long time on the ground to protect the plants, and the soil retaining sufficient moisture to bring them forward till the berry matures, even in the driest seasons; whereas, on the prairie, no such protection exists: the snow that falls upon the ground is partly drifted to the woods, and the remainder rapidly disappears under the combined action of the sun and of winds that meet with no obstacle, and consequently sweep over the land with unchecked violence, drying up the soil and withering the plant. For this reason, it may be said that the cultivation of winter grains is entirely abandoned on the prairie, in this section at least, as experience has proved it to be unprofitable.

The same effect is produced, although in a more subdued degree, with regard to spring crops; a dry season invariably affecting the open grounds of the prairie more injuriously than the timbered or the "oak openings;" for the obvious reason that on very open lands the winds carry off the moisture much more rapidly than on those places which are comparatively sheltered.

In mountainous or even hilly countries, the total destruction of timber is attended with the most lamentable results. Mountains receive far more water and snow from the clouds than the lowlands, and when their flanks are antirely denuded of the forests, which a beneficent Nature almost invariably plants there, the torrents produced by showers and melting snow meeting no longer with the powerful obstacles presented by the roots of trees, tear the sides of the mountains: deep ravines and land slides occur; and the floods, instead of depositing enriching alluvial matter in the valleys, roll upon them masses of gravel and sand which destroy their fertility; thus causing a twofold mischief, viz; washing the mountain-side down to its primitive formation, where only a stunted vegetation can afterward subsist, and covering the rich lowlands of the valley with barren soil, besides filling the navigable channels of rivers with sand-bars.

The wonderful adaptation of the works of nature to the wants of man is strongly exhibited with regard to the vast prairies of Illinois, Wisconsin, Missouri, Iowa, which are so destitute of fencing and building timber; and yet, by their climate and the fertility of their soil, are so capable of sustaining a dense population. The Upper Mississippi, and many of its principal tributaries, by which those States are watered, mostly take their source in Minnesota and Northern Wisconsin, in a country covered with dense forests of pine which are pronounced by most of those who have visited them, to be inexhaustable; so that every thing is ready for the benefit of man: the easily tilled prairie to supply the lumberman with food, the lumber to supply the prairie farmers with building and fencing materials, and the navigable streams to transport the needed commodities both ways.

Would it not, however, be prudent to take care not to exhaust this apparently inexhaustable supply of the products of pine forests? has not past experience demonstrated that they can and probably will be exhausted, and that, too, more speedily than most people would suppose it possible? Few persons, unless in the north-west, are fully aware of the magnitude which this lumber trade has already acquired, and of the ratio at which it is constantly increasing; and probably fifty years hence little of those valuable forests will remain.

I have thus adverted to a few of the evils threatened to the agricultural interests by the wholesale and indiscriminate destruction of timber now going on in most parts of the United States. I will not enter upon the discussion of many other interesting considerations which the question suggests, such as leaving the whole country bare of shade and foliage and unattractive to the eye, as well as the certain future scarcity of wood for fuel and timber, for fencing, ship and house building, and the many purposes for which it is indispensable in the mechanic arts. The subject is certainly important, in a national as well as an economical point of view. Certain it is that should the present wholesale destruction of timber go on increasing, as it bids fair to, with the increase of population, without the adoption of some plan to renovate those valuable forests, posterity will have little reason to thank us. No large extent of country, however fertile, can be very desirable as an abode to man without a fair proportion of timbered land. Wood is almost as necessary to civilized man as the bread he eats. G. De Neveu, *in Cincinnatus.*

## The Winds in their Circuits.

BY H. R. SCHETTERLY.

NUMBER FOUR.

In his Physical Geography of the Sea, Lieut. Maury has demonstrated that the general direction of the wind is around the earth from north to south, and *vice versa*. The cause of this general direction he supposes to be the magnetism of the air; and all other directions he attributes to the rotation of the earth on her axis from west to east, and to other adventitious causes. But he has not attempted to explain the manner in which magnetism operates; nor taken any notice of the fact that magnetism is merely an effect of electrical action, as demonstrated by Faraday. The following is intended to explain Maury's theory, on electrical principles; and the reader is desired to remember the two following rules:

1. Equally (like) electrified substances repel each other; 2. Unequally (unlike) electrified substances attract each other: whether they are both solids or fluids, or one solid and the other fluid.

It has long been known that there are three cloud rings extending around the earth from east to west. One of these is near the Equator; one near the Tropic of Cancer; and the third near the Tropic of Capricorn. But all these cloud rings travel with the sun: northward in our summer; and southward during our winter, but not so far as the sun does.—Under each of these rings there is almost a perpetual calm, and continual rainy weather, the year round.

As the earth is a globe (a spheroid) nearly twenty-five thousand miles in circumference; and rotates on her axis, once in about twenty four hours, it is manifest that the inhabitants near the equator are carried around much faster, and farther in the same time, than those in the polar regions, because the former are farther from the earth's axis than the latter. Since, then, the air impending over any particular place, is not attracted to that place, but towards the earth's centre; suppose that a particle of air sets out near the north pole to travel towards the south pole, or *vice versa*; it is obvious that, as the earth carries the inhabitants in the latitude of forty-five degrees, say, eastward, that particle of air would seem to come from a point east of north, and would actually come from this direction with regard to the earth's surface; and as the same particle approached the equator, it would come from a point, nearer and nearer east.—And what holds good with regard to a single particle, is evidently true with regard to the entire atmosphere; for, if the earth thus slips away eastward from under a single particle, it manifestly does so from under the whole.

Now, between the tropic of cancer and the equator, we find the north-east trade wind; and, between the tropic of capricorn and the equator, we have the south-east trade wind, both blowing nearly from the east, the year round; with the single exceptions of the Monsoons. We now come to our theory, leaving the cause of the monsoons to be explained afterwards.

Each of the trade wind currents blows over nearly one half the breadth of the Torrid zone, which is cloudless and rainless, except where one or other of the cloud rings passes over it in i s alternate vibrations north or south. Consequently both the earth and the air are intensely heated and electrified in that zone by the sun's rays. At the equatorial cloud ring the south-east and north-east trade currents encounter each other; and, as the air and the earth are equally electrified, they repel each other and the air rises, because it alone is mobile. At the same time the trade currents condense each other, as is proved by the continual calm and precipitation of rain. In these highly electrified condition these trade currents penetrate through and cross each other; the north-east continuing on south-westwardly, and the south-east north-westwardly; both as upper currents above those of the trade winds.

In the vicinity of the tropics, the earth is of course much less electrified than near the equator; while the upper currents just mentioned have radiated but little of their electricity to the earth, and vapor does not exist there. Therefore the earth and air of these upper currents, being alike electerized, the former attracts the latter, draws them down, and they become surface currents; and as such, approach the poles of the earth, and, in consequence of the rotation of the earth, in a north-eastwardly direction in the northern hemisphere, and in a south-eastwardly in the southern hemisphere.

As these surface currents cross the temperate zones, they gradually impart their store of electricity to the earth, and to the vapor which is gradually condensed into rain and snow. The air of which they are composed consequently again gradually becomes equally electerized with the earth's surface; and the latter again repels the former, forming upper currents that flow off in a south-westwardly direction. At the tropics, the earth is much more strongly electrified than in the polar regions where the sun has comparatively little influence, and therefore much more than the upper currents of air just mentioned. The former therefore again attracts and draws down the latter, and they again become surface currents, or trade winds, as they were at first when we began to notice them.

Such are the circuits of the winds as demonstrated by Lieut. Maury; and to substantiate his theory he has adduced numerous facts supplied by the observarion of men eminent in science; but only two of them, with his reasonings, can be stated in this article.

1. Seamen have often observed a brick-red or cinnamon-colored dust falling on their ships about the Cape de Verde Islands, and in that region of the ocean, hundreds of miles distant from land. Professor Ehrenberg examined some of this dust with his powerful microscope, and found it to be composed of the remains of infusoria which he recognized as identical with those animalcula found in the parched regions of South America, on the south side of the equator, during the dry season when no rain falls for months. This dust falls soon after the vernal and autumnal equinoxes; and there are places in South America which have their dry seasons and these infusoria corresponding to the time when the dust falls. There can, therefore, be no doubt that these remains are taken up by the south-east winds, for they are found no where else; and that these winds become upper currents at the equator, and surface currents again at the tropic of Cancer, blowing in a north-east direction; and that they then drop these remains.

2. The vapor taken up by the atmosphere cannot be condensed again into water, unless it is cooled or condensed by adverse currents of air. Now, as it rises with the air at the equatorial cloud-ring, and the air containing it consequently expands, the vapor can not be condensed until the wind that carries it becomes surface currents at the tropic of cancer. Hence the winds that bring settled rains to the north temperate zone, blow, when there are no causes in the way to turn them aside, in a direction east of north, or at least from a southward direction. Now, the rain gage shows, accordingly, that the average annual quantity of rain that falls, in the north temperate zone, is thirty-seven inches; while the quantity falling in the southern temperate zone, in the same time, is but twenty-six inches. Again, leaving the river Amazon out of the question, as belonging to both hemispheres; and a map of the globe shows that only about one third as much ocean surface is exposed to evaporation in the northern as in the southern hemisphere; and also that the rivers of the northern pour into the ocean a very much greater quantity of water than the rivers in the southern hemisphere. For, besides the Rio de la Plata, there are no large rivers in South America, in the southern hemisphere; none in Africa, none in Australia, and the other islands can have none. Now, since the water conveyed into the ocean, is obviously the quantity that falls above what is evaporated, it is plain that the water precipitated in the northern hemisphere, where the smallest extent of evaporating surface exists, and the greatest quantity of rain falls, must come from the southern hemisphere, where exists the largest evaporating surface and the least rain falls; and *vice versa*. And, as the winds carry the rain clouds, they must evidently bring it from the southern to the northern hemisphere, and *vice versa*; and must therefore cross each other at the equatorial cloud-ring, under which there is no wind, and constant rain, showing that the trade winds condense each other there.

Monsoons are winds that blow alternately in opposite directions, and about five months in each direction, for it takes them about a month to change from one to the other, and to become established in their courses; and during these intervals terrible storms arise.—There are monsoons in the Atlantic, in the Gulf of Mexico, in the Indian Ocean, and in the Pabific opposite Central America. But they are principally confined to the northern hemisphere; for in the southern there are no deserts to produce them. They are formed from the trade winds, and blow contrary to them during our summer, and during our winter in the same direction with the trade winds.

During our summer the desert of Sahara, and the deserts and arid plains of Asia, Utah, Texas, and New Mexico,—being for the most part composed of bare sand, without vegetation to shield it,—are heated up by the sun's rays: and both the sand and the dry air, impending over it, are equally and so highly electrified that the air is repelled and rises, leaving the impending air lighter than that of which the trade wind currents are composed. These intensely heated regions therefore attract the air composing the trade currents, and actually turn these currents back towards the region from which they came,—And when these retrograde currents are once established, they cannot stop suddenly, but actually cross the heated regions that produced them to a great distance. But, when the earth's annual revolution again brings the sun to the south side of the equator, and the cause that produced them has therefore vanished, these monsoon currents cease, and the trade currents resume their former direction, though seamen still continue to call them "monsoons."

The causes that produce the variable winds principally found in the temperate zone, are identical with those that regulate the trade winds and monsoons; but they operate under variable circumstances, among which are the following: In some places the earth's surface is such as to be more expeditiously heated and electrified by the sun than in other localities. The heated air then rises, the electrified surface of the earth attracts the less electrified air from other contiguous places; and we have a cool wind. And, for the same reason, a warm and highly electrified current rushes sometimes towards a less electrified and colder region of the earth's surface; because unlike electrified substances attract each other, but the earth's surface can not move, and the wind moves towards the attracting place. Clouds and dense forests hiding the earth's surface from the sun in some particular region and not in another, modify these relative conditions, and consequently exert an influence over atmospheric currents; and so do high mountains over which currents pass, particularly when covered with snow; and likewise large surfaces of water, which absorb and render latent a large quantity of electricity. That those enumerated above are among the principal causes of variable winds, is proved by the following well known facts:

The surface of the earth is more expeditiously electrified and heated, by the sun's rays, than a surface of water; and radiates its electricity more speedily to the atmosphere. Hence, along the shore of the ocean, a breeze sets from the water to the land as soon as the latter becomes positive to the former, in the forenoon; and in the evening, the breeze sets from the land to the water, when this becomes positive to that. Again, the Sandwich and Society Islands, situated far away from any large body of land, and in a warm and sunny clime, have a considerable influence upon the trade winds, similar to that of deserts; for they often turn the trade currents back. But these reversed currents are local, and extend only to a short distance from those islands, which are too well wooded and too small to produce monsoons.

Lastly—Like every other substance, air is endowed with Inertia. That is,—some extrinsic cause is requisite to bring it to rest, when in motion; and when at rest, an external cause is also required to set it in motion. Consequently, a current in the atmosphere always passes beyond the location of the cause that set it in motion; and can be put to rest only gradually, by being condensed against, and condensing the body of air against which it moves; though mountains and forests also exert some influence in this respect. If, after a current has been brought to rest, the first moving cause still exists and exerts more force than any other, it will produce a retrograde current; and thus forward and backward vibrations are produced, each of longer or shorter duration, according to their velocity and the distance they move.—But if a predominating cause exist in the vicinity of a current, that current may be inflected into any other direction.

*Grand Traverse, Mich.*, 1859.

## Surface Manuring.

BY WM. BRIGHT.

[The following article on Surface Manuring by Mr. Bright, of Logan Nursery, Philadelphia, which we copy from the *Gardener's Monthly*, is worthy of a careful and attentive perusal by all practical farmers, and especially Nurserymen.]

The agricultural circles are very much exercised at the present moment with the question, whether it is better to apply manure in a partially rotted state upon the surface of the earth, weeks or months before they are required for crops, or to decompose them in heaps, and plough them in as soon as applied, at planting time. The best writers, both practical and theoretical, in England and America seem to incline to the first mentioned practice, in reference particularly to grass and grain; and the best effects are shown to have resulted from this method of application,—from surface-manuring.

The practice of top-dressing, or of surface-manuring, has long been the favorite method employed by all intelligent gardeners within the circle of my acquaintance. We have long ago learned that masses of rich, nitrogenous manures are not what plants require about their roots; but that manures are applied much more successfully (and less injuriously) by top-dressing, either in solid or liquid form. Nature never manures her plants with crude masses of concentrated fertilizing substances; but imparts her stimulating and mineral food in a state of the most minute division, (almost infinitesimal,) chiefly from the surface of the earth. No wonder so many fruit trees have been killed, so many grape-vines destroyed or rendered barren by excess of wood in consequence of the heavy manuring at the roots so universally recommended by writers on gardening and horticulture.

The great objection to surface-manuring is founded upon the probable loss of ammonia, caused by the exposure of decaying manures upon the surface of the earth. But this loss has been shown by sound reasoning and by facts deduced from practical experience, to be much less than is commonly apprehended; while the benefits arising from surface-manuring, in other respects, more than counterbalance any possible loss of ammonia from this practice.

In the first place, when manures are exposed upon the surface of the earth, even in hot weather, decomposition no longer goes on so rapidly as when the same manures are kept in a heap, and the ammonia that is produced is gradually carried into the soil by rains. The other soluble substances, as potash, lime, the phosphates, &c., are, of course, not lost, because they are not volatile.

Nor are these soluble and valuable substances lost to plants by being carried into the soil before they are needed by growing plants. It has been conclusively shown by eminent scientific authorities, that any good soil, containing a fair proportion of clay and carbon, is capable of taking up and retaining effectually ammonia, lime, potash, soda, &c., in a soluble form, so that little, if any, passes off in the underdrainage water of such soils These substances, it is true, may wash from the surface, but they cannot pass through a good soil, and go off in the drainage water.

By surface-manuring, we mulch the ground and render it cooler in summer and warmer in winter. Mere shade is an important element in culture, so important, that some writers have thought shade alone to be equivalent to manure. A piece of soil heavily shaded by surface-manuring actually decomposes like a manure heap; that is, it undergoes a sort of putrefaction or chemical change, which sets free its chemical constituents, unlocks, as it were, its locked-up manurial treasures, and fits its natural elements to become the food of plants. Darkness, moisture and air, are the conditions required for vegetable and mineral decomposition. These conditions are produced in the soil by surface-manuring.

Then, again, when the surface-manure decomposes, its elements are washed into the soil, in a state of solution precisely fitted to meet the wants of plants, and they become themselves active agents in promoting further decomposition and chemical changes in the entire body of the soil.

Manure then, I say, chiefly upon the surface. Do not waste your manures by mixing them deeply with the soil. Plant shallow.—Keep roots of all trees, plants and vines, as near the surface as possible. There are weighty reasons for the position assumed in the last sentence, which I have not space now to enumerate. I say again, plant shallow.—Let your soil be deep and dry, but plant near the surface. To farmers I would say, manure upon the surface as much as possible.—Top-dress your grass after mowing in July or August under a burning summer sun; top-dress in the fall, before and during the autumn rains; manure the surface while snow is on the ground, while the March winds blow, and while the April rains fall. Manure your grass, instead of your corn and wheat, broadcast, at any time when you have manure and leisure, and I will guarantee that you will be abundantly satisfied with the result.

To fruit-growers I would say, do not fill your soil with manure before you plant trees, grape-vines, &c. Plant in good natural soil, and manure from the surface, spring and fall, liberally and properly, and I will guarantee you success far greater than if you plant in holes and trenches filled with manure, as the custom is. Surface-manuring and mulching are the true doctrines. I am sure of it.

— The libel trial of Edwin Forrest against N. P. Willis has resulted in a verdict of $500 against Mr. Willis.—Mr. Forrest paid $2,500 for his assault on Mr. Willis in 1850.

## Potato Experiments.

Last season we made an experiment with four varieties of the potato upon one field, namely: Davis' Seedlings, Long Reds, Round Whites and English or Peach Blow. We planted upon a soil, of from medium to quite moist; yet not very heavy, for we traced the roots of some apple trees which grew upon one side of it, nearly five rods from the trees. The sod was turned under a few days before planting, and well prepared by first harrowing, and then cultivated till the surface was fine and free. A shovel full of coarse, strawy manure, and a gill of ashes were put in each hill. The rows were forty inches apart, and the hills twenty-five inches.

The seed of each of the four varieties was prepared in this manner: From a part, the seed end was cut, taking off from one quarter to one third of the potato; a portion of these seed ends were cut in two, and two of these pieces put in a hill; a part also were planted without dividing, two pieces being put in the hill; of the remaining part of the potato after removing the seed end, some were cut in two or three pieces, having from one to two eyes on a piece, and these planted two pieces in a hill, and some were planted one in a hill. Again, others were planted by dividing the whole potato, cutting from the seed end through, dropping from one to two pieces in a hill, according to the size of the tuber.—And again others were planted, one medium sized tuber in a hill without dividing at all—the object being to ascertain if possible the difference of yield from the number of eyes, from three or four to a dozen or more in a hill. A birds eye view of the field would be say

| | | |
|---|---|---|
| 1 | 4 rows, seed ends cut | 2 pieces in a hill. |
| 2 | " seed end whole | " |
| 3 | " butts cut | " |
| 4 | " " whole | " |
| 5 | " potato cut | " |
| 6 | " " whole | 1 piece in a hill. |

In harvesting, the result was not very marked, in respect to quantity. The size and shape of the potato were the best where the butts were divided, almost every one being fit for the table. But the test of one year will not decide, and we intend to make a similar trial the present season.

All four varieties were more er less diseased, the whites most, English reds and long reds next, and Davis' seedlings least of all, and many are found slightly diseased with dry rot, as we use them, which were apparently sound when put in the cellar, last autumn.

And now, allow your humble servant to express a humble opinion on two points connected with the potato and its culture. And first: Our annual experiments for the last twelve years, have made us very confident, that from two to four stalks in a hill is enough, producing larger tubers and more pounds of potatoes in the aggregate, than six to a dozen stalks would in the same hill; that too much seed, together with stimulating manures, and high culture, has tended to undermine the constitution of the potato, and rendered it susceptible of disease. The nature and prolific power of the potato has been changed, just as over feeding renders domestic animals and even men, less vigorous in health, and especially in reprodution.

And secondly, we "almost" think we have "discovered" the cause of the "disease." In digging the potatoes in the above field, last fall, where the row was narrow and the hills small and elevated, so as to be more sensible to the sudden changes, from the heat of the sun, to a cold chill by a shower bath, we found tubers with dark spots below the cuticle, a slight pressure removed the cuticle, and evident disease and decay had commenced. A thought was the result—it was this: The constitution of the potato is enfeebled by unnatural and excessive culture, the development of the cuticle is imperfect; when the potato from its position, aided by the nature of the soil and the rays of the hot sun being warmed up to an unnatural degree, (for the potato is cold-blooded) then suddenly cooled by a heavy shower, or storm of rain. Is it not probable that the delicate and important covering has been impaired, and its vitality destroyed by the extremes? The oxygen of the air attacks the flesh of the potato, just as it does your hand when you jam off the skin.

Was that thought a wild chimera? We dug, examined and thought, and thought, examined and dug. It was not one solitary case, but over most of the field we found the same law to prevail. We did not notice on which side of the tuber, as it lay in the hill; the disease was found, whether upper, lower or horizontal side, it may not be important, we wish we had however, and will think of it, if we try again.

The Journal need not be alarmed. We do not much expect to make it the honored medium of first announcing to the world the cause of the potato disease.—W. D. L.—In N. H. *Journal.*

### ANSWERS TO CORRESPONDENTS.

*E. W. K., Dedham, Mass.*—If you will send us the address of that "Absent Friend" we will forward the "lines" to him.

*T. S. B.*—The only aid we can give at present is the notice in another column.

### NEW ADVERTISEMENTS.

THOMAS WILLIAMS, Plymouth, Imported Stone Plover.
A. O. MOORE & Co., N. Y.....Land Drainage.
do do do.....Langstroth on the Bee.


# MICHIGAN FARMER.

## R. F. JOHNSTONE, EDITOR.

**SATURDAY, APRIL 30, 1859.**


### The Agricultural College.

Knowing well the very great interest that is felt throughout the State in regard to the Agricultural College, and its progress, we have devoted a large portion of our space for this week to a statement of the suggestions which an every day intimacy with its business, and its necessities presents to us.

We may say here, editorially, that the utmost union and harmony prevails among the members of the Faculty and the officers, and also a general willingness to give their whole strength and ability, each in his separate department, to make the Institution what the people of the State desire it should be, and what it was designed to be. There is no lack of work in any of the departments. The desire to economise and render the Institution useful, and yet keep its expenditures within the financial limits prescribed by the Legislature, pervades every individual connected with its management, from President Fisk to the Steward, at any outlay of personal exertion.

We shall continue these suggestions from time to time as they occur; as it is the only method of making the people of the State acquainted with the wants, capacities and utility of this College, and of enabling them to judge correctly, whether it can be made a useful portion of the educational system of Michigan, or whether it shall be a mere toy to be used as a political shuttle-cock, and bandied about from pillar to post, as each battledore happens to strike it.

### A note about Breeding.

We have long and often suggested to the breeders of cattle the of necessity attending to the quality of the dam, and we have told our horse breeders that they must, if possible,, secure quality in the dam, if they would be sure of having the right kind of animal in their produce. We have frequently called attention to the fact that in the Morgan and Black Hawk families there never has been a first-rate performer at long distances, or at a high rate of speed, without the dam was of high quality and well bred, as an illustration of this principle. We notice in this connection, that a writer on the breeding of hunters (a first rate class of horses which are extremely scarce in England just now) in a standard foreign journal, observes:

"It is now I believe, an established physiological fact that a horse inherits his make, shape and outward appearance from his sire; his constitutional qualities, such as speed, courage and endurance from his dam. The idea has long since been exploded that what is termed a large roomy mare will produce a big powerful foal, on the contrary some of the finest horses we possess have been the produce of mere ponies; but these were ponies only in size; and a monstrous animal, nearly twenty hands high, is now going the rounds of every fair in the kingdom, whose mother, if we are to believe the man who shows him, was little more than two-thirds this height. The mare, however, from which we propose to breed, should be a thoroughly good one, and still retaining the whole freshness and vigor of her constitution. She should also be extremely well bred; for if her inner qualities are to descend to her offspring, it is indespensible that she should possess those lasting properties of wind and endurance, without which a horse is the most cumbersome possession on the face of the earth. We should much prefer to put a thoroughbred mare to a half-bred horse, than *vice versa*, though the latter is by far the commoner practice, and that among our intelligent and scientific farmers—men who make but few mistakes in the breeding of any other kind of stock. We believe there is yet much to be discovered as to the influence of "blood" upon future generations. Several curious experiments have been tried with cattle, sheep and pigs, and most breeders will, we think, bear us out in affirming that, to use their own terms as regards *quality*, the influence of the female is paramount."

We hope our breeders will note these remarks, and add them to the precepts and examples we have so often quoted.

The same writer observes, "that nothing improves a young horse so much as trotting him across ridge and furrow; it supples his neck, teaches him to use his shoulders, makes him quick upon his legs, and beats all the circling and lunging in the world.

☞ We have the pleasure of being able to announce that HORACE GREELEY, the editor of the New York Tribune, has written the Secretary of the State Agricultural Society, that he has accepted the invitation tendered him by the Executive Committee, and that he will deliver the Annual Address before the Society at the next exhibition. This we know will be gratifying to very many of the friends of the Society, and we announce it thus early.

### Setting a noble Example.

The following letter from W. H. Montgomery Esq., of Ida, Monroe County, manifests the right spirit in relation to the FARMER, and we hope its perusal will animate others to emulate him. The FARMER will never be more worthy of the patronage of Michigan Agriculturists than during the coming season. It will contain the details and experience acquired in the subduing of some of the toughest and heaviest land in the United States. It will not be the experience of laying out a large amount of capital, but on the contrary, it will be such as occurs in every day Farmer's life, performed it is true with a large amount of systematized labor at command, but that labor will be furnished principally from the ranks of the farmers themselves. For at the institution with which we are connected, we have some lands in all the stages of reduction to an improved state fitted for the highest cultivation—none as yet fully fitted for that, but in all the grades. 1. We have the untouched forest, with oak, beech, maple, bass-wood, and elm and others of the heaviest timbers. Some of the trees are from four to five feet in diameter. 2. Next we have land on which the timber is nearly chopped, and the brush gathered and lying ready to burn during the summer for wheat next year. 3. We have land on which the timber has been cut and is now burning off to get ready for its first crop which is to be oats sown this spring, but only to be dragged. 4. We have land which has borne one crop, and on which we are putting in our second crops, burning logs, picking up roots, and plowing around stumps that stand as thick on the ground as the famous "leaves in vallambrosa."

5. We have land cleared of stumps, and seeded to clover after one or two crops.

6 We have also marsh lands that have been cleared, and are undergoing a drying process by the use of special drains laid down to get clear of the water, and which have rendered lots available for the plough, that were muck holes of the worst character.

The work done is all effected by the students each working but three hours per day, with the aid of four yoke of cattle and two pairs of horses.

The methods, plans and cost of the reduction of these lands will appear from time to time. Need we ask what can be made more instructive or more suitable for township libraries, than such information?

But here is Mr. Montgomery's letter.

R. F. JOHNSTONE, *Dear Sir*:—Enclosed please find ten dollars for which I wish you to send seven copies of the MICHIGAN FARMER to the Township Clerk of the Town of Ida, Monroe Co., Mich. Not succeeding to my wish in procuring subscribers to the FARMER, I have prevailed on the Inspectors of Primary Schools to devote that amount by way of experiment, to introduce a copy of the FARMER into each school district for general reading. This being strictly an agricultural township, I am inclined to believe the dissemination of agricultural knowledge will be more beneficial to the inhabitants than an increase of our Township Library, to the amount appropriated to the experiment.

The prospect now is not very encouraging for the heavy clay land in this county.—Wheat has suffered more from freezing in April than during the winter. Farmers are engaged in preparing to sow oats and barley, but the air and soil are too cold to promote vigorous vegetation, and with oats, especially of last years growth, the germinating powers are too weak to be long exposed in a damp cold soil.

I am apprehensive that the peach crop in Southern Michigan will be a failure the coming season. I have examined in many localities and find the blossom buds generally injured.

Yours Respectfully,
W. H. MONTGOMERY.

N. B. Mr. Montgomery is a member of the Executive Committee of the State Agricultural Society.

—At the excavation of the ground on which St. Peter's Church recently stood, at Albany, a double coffin was discovered, supposed to be that in which Lord Howe, who was killed at the Battle of Lake George, July 6, 1758, was buried.

### The Bashaw family of Horses.

*Mr. Editor*—As the breeding of horses is becoming daily a subject of more interest to the agriculturist as well as others whose interest or amusement is in any way connected with the horse, I thought I would say a word about the Bashaw horses that have been raised in Bucks Co., Penn. In the year 1820 there was an Arabian horse imported from Tripoli in North Africa, by a Mr. Morgan into Montgomery Co., Pennsylvania; said horse was called "Grand Bashaw"; he was the sire of a horse out of a Messenger mare that was called "Young Bashaw"; he was first introduced into general notice by Samuel Mc Crackin Esq., of Morrisville, Bucks Co., Pennsylvania. "Young Bashaw" got the horses Andrew Jackson, Washington, Saladin, Black Bashaw, as well as many others which I cannot now call to mind, all of which were horses of great speed and powers of endurance, Jackson being able to make his two mile heats in 5-17 and won a number of races on the Hunting Park Course, Philadelphia. Saladin also won some important colt purses which brought him into much repute as a stallion, and the remainder of his life was used for breeding trotting horses for which he bore a high reputation. One of his get was sold last summer by a gentleman of this county for $1,300 and another for $2,250 both geldings, and many others which might be mentioned, brought high prices.

The demand there is for these horses growing out of their known speed and ability to endure hardships, has established for them the first class horse that has ever been in Pennsylvania, and this trotting propensity having been cultivated down to the third and fourth generations, it still seems to increase; see "Lantern," Grey Beard," and others.

You, Mr. Editor, may know one of these horses called "Bay Bashaw" that trots in 3 minutes, brought into your state by the Messrs Bailey, which is now standing for mares in the vicinity of Birmingham, which would be greatly to the credit and profit of those wishing to breed to hunt up and secure his services. The Messrs Bailey took out with them a mare that was out of "Jackson," and with foal by "Bay Bashaw"; this stock small in number as they are, may form a nucleus around which breeders would do well to gather and perpetuate this noble race of horses which Pennsylvania is so proud to own as the production of her soil.

ISAIAH MICHENER.
*Gardenville, Bucks Co., Penn.*

## General News.

— The shareholders of the Ann Arbor gas company have a dividend of five per cent announced as the nett earning of the company for the first six months of its organization, ending March 1st, 1859. The cost of the whole works was about $26,000, and they are of sufficient capacity to supply a population of nearly 50,000.—They have upwards of four miles of street main.

— We see from announcements in the Three Rivers papers, that St. Joseph county, in this State, is going largely into the Sorghum syrup business this season.—C. S. Wheeler, of Flowerfield, advertises that he is preparing to turn off twenty barrels of syrup per day, and will manufacture for all the country round about.

— The departure of the first Pike's Peak mail and passenger train has been postponed, in consequence of the non-arrival of the ambulaces. All the other arrangements of the contractors are perfected. The equipment consists of 75 wagons, 50 coaches, 400 men, 800 mules, and 300 oxen.

— It is stated that the Empire Machine Company of Norwich, Conn., have contracted for building five thousand sewing machines for one New York company.

— Nine and a half millions of acres of the public lands in Kansas and Nebraska, which were withheld from the sale last year on account of the financial revulsion, will be in the market in July, August and September. It is expected that these sales will increase the revenue for the next fiscal year very materially.

— A Vicksburg paper says that card playing among steamboat travelers in the West has diminished fully one half within the last year, and its place has been supplied by chess.

—Southern travel, northward, is setting in strong, thus early in the season. The Savannah, Charleston, and New Orleans steamers have about as many passengers as they can accommodate. The James Adger, from Charleston Monday night, had 180, including many families.

— The Court Milliner recently died in London, leaving property valued at $400,000. She leaves most of it to charities; for herself, she directed that she be buried in point lace.

— The steamer St. Nicholas, on the Mississippi river, exploded her boilers on the night of the 24th inst., killing forty-one persons, and severely scalding and injuring many others. The boat and cargo a total loss.

*Ryan has Spoken again.*—The renowned Weather Prophet is growing historically eloquent, as well as atmospherically weather-wise. He holds forth as follows in a late number of the Detroit *Tribune*:

"Farmers and Mariners, for you in particular I have labored since the comet appeared in 1811. I was then thirteen years of age. This was the first thing that drawed my attention to the firmaments of Heaven, which, by the will of God in raising up men who helped a feeble unworthy man to lay before the world a knowledge of those sublime and meritorious laws that govern the winds and weather, who have done to me as the good, the wise and the gracious Isabella did to Columbus. I mean the Rev. Dr. Duffield, Hon. Ross Wilkins and R. N. Rice, Superintendent of the M. C. R. R. Here I will ask which endeared her name the most, the crown she wore, the brilliant victories she gained over the Moors, or pledging her jewels to help a sailor then called crazy in his discovery.

"Farmers crowd in your corn from 1st to the 10th of May, if possible; there is now no guaranty that we shall have S. W. wind in September, as last. If N. W. wind should be the prevailing wind for the fall, in that case early frost would kill late corn. Don't run any risk; I will not.

"If you wish to avoid potato rot, plant late potatoes from the 10th to the 18th. I have lost no potatoes by the rot since I came to Michigan in 1838.

"The changes in May will be on the 4th, 5th, 11th, 12th, 18th, 19th, 25th and 26th, which are the days on which the changes for that month will commence. That ends the spring."

—The Rev. Dr. Beresford of England, who is related to a noble marquis, and who with a living of £1,000 a year, committed forgery to an enormous extent, is now employed in sweeping the wards in the new prison at the convict station in Fremantle, Western Australia, whence he was transported for his crimes. England metes out justice without respect to persons.

—The editor of the *Beaver Dam* (Wis.) *Democrat* says that one wing of the Minnesota State University is completed, at a cost of $49,000. It is one-third of the proposed structure, and has a mortgage and cupalo on top. The main building is to be run up like the tower of Pisa, with a lien to it, and another wing is to be *attached* next year by the Sheriff.

—It is stated that the Rev. T. Starr King of the Hollis street church, Boston, has lately had an offer from the church in Chicago, recently under the charge of the Rev. George Noyes, to assume its pastorate at a salary of $5,000.

—Mrs. Narcissa B. Coffin, an approved minister of the Society of Friends, of Nantucket, addressed the City Council of New Bedford at a special meeting held for the purpose last Saturday evening. She exhorted the Council to be guided by justice and mercy in all their public and private acts, and to practice the golden rule. She asked them why they should make stringent temperance laws and not practice temperance themselves, or break up gambling shops, unless their own examples were good.

—The peach crop in Northern Missouri and Southern Illinois has been destroyed, and there is no hope for more than a very small quantity of that fruit the present year. Southern Missouri promises better.

## Scientific Intelligence.

*Agricultural Patents issued for the Week ending April 12. 1859.*—Jacob Benner, Alleghany county, Penn. Grain Separator, and Smut machine.

L. H. Colborn, Baltimore, Md. Harvester.
J. P. Crutcher, Silver Spring, Tenn. Cotton seed planters.
J. B. Duane, Schenectady, N. Y. Seeding machines.
James Ford, Wabash, Ind. Grain drills.
T. Harvey, Baltimore, Md. Horse collars.
W. T. Hildrup, Harrisburgh, Penn. Rotary harrows.
W. C. Holmes, Barnesville, Geo. Plows.
G. Lord, Watertown, N. Y. Harvesters.
D. T. Robbins and S. Morris, De Witt, Ill. Mole plows.
H. H. Scoville, Syracuse, N. Y. Harvesters.
S. M. Wade, Andover, O. Rotary harrows.
M. D. Wells, Morgantown, Va. Seeding machine.
W. H. Wilson, Summerville' O. Plows.
Harrison Fitts, Somerset, Mich. Cleaning grain.
H. Johnstone, Collinsville, Ill. Cutting cornstalks, &c.
J. I. Sigler, Martin's Ferry, O. Threshing machine.

## Literary News.

*Harper's Monthly* for May is received. It is a rich and beautiful number, illustrated with a great variety of engravings. One of its novelties is an illustrated poem entitled "The lamentable Complaint of Katharina Maria Poppelle, *nee Kate Mary Popple*." Among the other contents are Lounging in the Footprints of the Pioneers, The Merchant, Mrs. Margaret's Hobby, Quarantine and Ventilation, The Rothsays, Lynch Law, Such a Mistake, The Golden Elephant, and a continuation of Thackeray's Virginians.

It is said that Mr. Washington Irving has completed the fifth volume of his Life of Washington.

The family of the late Joseph Rodman Drake have withdrawn their opposition to the sale of Messrs. Rudd & Carleton's edition of the Culprit Fay, the publishers paying them a copyright.

How much is frequently conveyed by the words, "gas" "gammon," "bosh," and the like. What better characterization of some literary productions can be found than is contained in the homely words—"patty-cake."—*Emerson.*

Shakespeare's plays were first published in a book in 1623.

Dr. Edward Beecher of Galesburgh, Ill., author of the book which was published some years since, entitled "The Conflict of Ages," is about to bring out a new book, to be called the "Concord of Ages."

Mrs. Lydia A. Jenkins has been invited by the students of the Lombard University, (Galesburg, Ill.,) to deliver the Occasional Address at the annual commencement at that institution, on Thursday the 9th of June next.

A novel in type which will commend it, at a glance, to feeble eyes, has just appeared from the press of Harper & Brothers; the London critical journals award it no ordinary meed of praise, and the author's previous effort will draw to it many expectant readers. It is "The Romance and its Hero," by the author of "Magdalen Stafford."

*Mr. Dickens' New Magazine.*—Charles Dickens' new monthly, *All Round the Year*, is just ready for publication. It is thought Mr. Dickens will purchase *Household Words* when its sale is forced through the courts, and merge it in the new journal. The contributors to the new paper will be the same as are now on the *Household Words* staff—all following their leader to the new ship. The principal names among these are Mrs. Gaskill, Messrs. Hollingshead, Wray, Thomas, Thornbury, Lang, Wilkie Collins, &c. Mr. Sala, so long a popular contributor to *Household Words*, has had a quarrel with Mr. Dickens, and will not write for the new paper.

## Foreign News.

From Europe the news continues threatening.—The negotiations for the Congress were progressing slowly. Austria positively refuses to take part therein without previous simultaneous disarming.

The latest complexion of affairs is warlike.—Paris letters regard peace as hopeless. The movements of the French troops had assumed most threatening proportions, and preparations otherwise continue.

The *Patrie*, nevertheless, asserts that France has not armed.

Austria's propositions in regard to the Congress are said to be unacceptable to France, who is not prepared to take the field for a month or six weeks. Napoleon, consequently, seeks delay.

A dispatch from Turin says; "The attitude of Austria on the frontier is menacing. Reinforcements are every day arriving from Pavia." Letters from Milan confirm the authenticity of the account of the belligerent order of the day addressed to the Austrian army. On the contrary, however, the Paris *Patrie* states that the posting of the order of the day in the barracks at Milan was a hoax.

The Austrian troops continue to advance upon the frontiers of Piedmont, and were taking up very threatening positions.

Advices from Cochin China state that the French squadron and expeditionary party had quitted their station, leaving, however, a party of occupation, who had been attacked by the Cochin Chinese, with a loss of 200 men on the French side. Rich gold mines had been discovered at Tonquin.

The Governor-General of India had proposed to increase the customs duties to the amount of £1,300,000 a year, as one of the means for relieving the financial embarrassment of the government.

The latest news from Paris is generally of a pacific character, but the correspondent of the *Herald* says that the warlike preparations of France continue on a most tremendous scale, troops pouring into Lyons from north, south, east and west.

The steamship Tennessee reached New Orleans on the 26th inst., with advices from Vera Cruz to the 22d, and from the city of Mexico to the 19th.

Miramon had forced the lines of Gen. Ampudia at Orizaba, and reached the capital on the 11th inst., with a diminished army.

The liberals had been defeated and driven from Tacubaya and Chapultepec, losing 200 men.

Miramon was murdering peaceful foreigners indiscriminately.

A formal protest had been issued against the recognition of the Juarez government.

Consul Black's exequator had been withdrawn, and he had been banished from the country.

Mazatlan had been threatened by Pesquiera.

The English were threatening the Pacific ports, and demanding payments. The British Minister insists upon full payment of all claims. The British commander at Vera Cruz had been instructed to demand $1,500,000 from the custom house, and, in case of refusal, was to bombard the city.

Juarez' exequatur of the Spanish Consul had been withdrawn.

## FARM MISCELLANEA.

**Fruit and the Crops.**

Of course it is impossible to tell exactly what will be the condition of the crops on harvest day; but, from present indications, we feel justified in believing that the wheat crop of Kent County will be greater than ever before—while the average yield per acre will scarcely fall beyond the most favorable years. Hay will also be plentiful next Autumn, unless no rain at all falls in May. As for fruit, it seems to be generally conceded that all indications point to an immense supply of a good article—particularly of apples. —*Grand Rapids Inquirer.*

**A Good Horse for sale.**

We learn that the Trudeau Stallion, Fox-hunter, must be sold on or before the sixth of June. This horse is one of great substance, and has produced some very fine colts around Niles. He also shows good speed and is in every way a useful stock horse, of excellent temper, kind in harness, and as a driving horse alone he is valuable. He was exhibited at the fair of 1856, and though not awarded the first premium on speed, he was awarded the second, with the general feeling among the judges that he was well worthy of the first Those who want such a horse, should apply immediately to Thomas S. Ballard, of Niles, who will give them any information they may need. We think he can be got at a bargain.

**How to keep Horses fat and in condition.**

"If I were asked to account for my horses' legs and feet being in better order than those of my neighbors, I should attribute it to the four following circumstances: First, that they are all shod with few nails, so placed in the shoe as to permit the foot to expand every time they move; secondly, that they all live in boxes instead of stalls, and can move whenever they please; thirdly, that they have two hours' daily walking exercise when they are not at work; fourthly, that I have not a head-stall or rack-chain in my stable; these four circumstances comprehend the whole mystery of keeping horses' legs fine, and their feet in sound working condition up to a good old age."—*Miles.*

**Feeding Stock.**

The London Omnibus Company have recently made a report on the feeding of horses which discloses some interesting facts. It seems that the company uses no less than 6000 horses; 3000 of this number have for their feed bruised oats and cut hay and straw, and the other 3000 get whole oats and hay. The allowance according to the first system was—bruised oats 16 lbs., cut hay 7½ lbs., cut straw 2½ lbs. The allowance according to the second—unbruised oats 19 lbs., uncut hay 13 lbs. The bruised oats, cut hay, and cut straw amounted to 26 lbs., and the unbruised oats, &c., to 32 lbs. The horse which had bruised oats, with cut hay and straw, consumed 26 lbs., per day, and it appears that it could do the same work as well, and was kept in as good condition, as the horse which received 32 lbs., per day. Here was a saving of 6 lbs., a day on the feeding of each horse receiving bruised oats, cut hay, and cut straw. The advantage of bruised oats and cut hay over unbruised oats and uncut hay is estimated at 5 cents per day on each horse, amounting to $300.00 per day for the company's 6000 horses. It is by no means an unimportant result with which this experiment has supplied us. To the farmer, who expends a large sum in the support of horse power, there are two points this experiment clearly establishes, which in practice must be profitable: first, the saving of food to the amount of 6 lbs., a day; and, secondly, no loss of horse power arising from that saving.

# The Household.

*"She looketh well to the ways of her household, and eateth not the bread of idleness."*—PROVERBS.

EDITED BY MRS. L. B. ADAMS.

### THE OVER HEART.

BY JOHN G. WHITTIER.

For Him, and through Him, and to Him are all things, to whom be glory forever!—PAUL.

Above, below, in sky and sod,
In leaf and spar, in star and man,
Well might the sage Athenian scan,
The geometric signs of God,
The measured order of his plan.

And India's mystics sang aright
Of the One Life prevading all,
One Being's tidal rise and fall
In soul and form, in sound and sight,
Eternal outflow and recall.

God is: and man in guilt and fear
The central fact of nature owns;
Kneels, trembling, by his altar-stones,
And darkly dreams the ghastly smear
Of blood appeases and atones.

Guilt shapes the terror: deep within
The human heart the secret lies
Of all the hideous deities;
And, painted on a ground of sin,
The fabled gods of torment rise!

And what is He? The ripe grain nods,
The sweet dews fall, the sweet flowers blow,
But darker signs his presence show:
The earthquake and the storm are God's,
And good and evil interflow.

Oh, hearts of love! Oh, souls that turn,
Like sunflowers to the pure and best!
To you the truth is manifest:
For they the mind of Christ discern
Who lean like John upon his breast!

In Him of whom the Sybil told,
For whom the prophet's harp was toned,
Whose need the sage and magian owned,
The loving heart of God behold,
The hope for which the ages groaned!

Fade pomp of dreadful imagery
Wherewith mankind have deified
Their hate and selfishness and pride!
Let the scared dreamer haste to see
The Christ of Nazareth at his side!

What does the holy Guide require?—
No rite of pain, nor gift of blood,
But man a kindly brotherhood,
Looking, where duty is desire,
To him the beautiful and good.

Gone be the faithlessness of fear:
And let the pitying heaven's sweet rain
Wash out the altar's bloody stain,
The law of hatred disappear,
The law of love alone remain.

How fall the idols false and grim!—
And lo! their hideous wreck above
The emblems of the Lamb and Dove!
Man turns from God, not God from him,
And guilt, in suffering, whispers Love!

The world sits at the feet of Christ
Unknowing, blind, and unconsoled:
It yet shall touch his garment's fold,
And feel the heavenly alchemist
Transform its very dust to gold.

The theme befitting angel tongues
Beyond a mortal's scope has grown.
Oh heart of mine! with reverence own
The fulness which to it belongs,
And trust the unknown for the known!

—*N. Y. Independent.*

### Corrections.

MICHIGAN FARMER.—R. F. Johnstone, Esq., of Detroit, having been appointed by the Governor, General Superintendent of the Agricultural Farm, he has retired from the editorial charge of the *Michigan Farmer*, an agricultural periodical which he has conducted with marked ability for several years past. The Farmer is left in charge of Mrs. L. B. Adams, a lady thoroughly versed in agricultural matters and possessing a fine literary taste.—*Allegan Journal.*

If our friend of the *Journal* had been trying for a wager, he could hardly have crowded more errors into one small paragraph than he has in the above. He certainly has not read Mr. JOHNSTONE'S announcement of his appointment in the FARMER of April 16, or he never could have made such a statement, for there it is expressly said, "This acceptance does not by any means close our connection with the MICHIGAN FARMER," &c. Will the editor of the *Journal* please turn to page 125 of the FARMER and read; he will there find that Mr. JOHNSTONE is now as veritably the editor as he ever was: and furthermore, that the *Board of Education* tendered him the appointment as superintendent, not the *Governor*. Again, the expression "Agricultural Farm," is a ridiculous tautological phrase, which a printer should no more permit in his paper than any other "doublet;" unless, indeed, there may be Mechanical farms, Mercantile farms, Literary and other professional farms, when the Agricultural might come in by way of distinction.

In regard to the latter clause in the *Journal's* remarks, we refer again to the FARMER of April 16th, where it is distinctly stated that "the *business* department will be attended to" by us, as it has been for the past three years. We utterly disclaim all qualifications for the editorship of such a journal as this, and are about as far from being "thoroughly versed in agricultural matters" as the Allegan editor is from any knowledge of the subject he has undertaken to write about.

Please correct your statement, Mr. Henderson; it does the MICHIGAN FARMER great injustice, wrongs the Editor, and throws responsibilities upon our shoulders which even a strong-minded woman might shrink from without incurring the blame of cowardice.

L. B. ADAMS.

### Woman's Rights Again.

Some of our readers either do not or will not understand us by what has already been said in the FARMER on the much vexed and perplexing question of woman's rights; at least we judge so by the tone of letters received, and if explanations are necessary they may as well be made at once. Some seem to think we are right enough in principle, but a little cowardly about coming out openly and above board; some think we are trying to temporise matters too much, and ought to speak out more decidedly one way or the other; while others still set us down as an enemy to woman's improvement, because, in one of our early numbers, something was said about "wide-mouthed brawlers."

This being the condition of things, it becomes necessary for us, as politicians would say, to "define our position," which we shall do, firstly, by stating the articles of our creed, and, secondly, by making such remarks as seem called for by the subject and the correspondence before us.

ARTICLE 1. We believe that woman should have all the rights and privileges she can make use of for her own good and the benefit of others.

ARTICLE 2.—We believe that the rights women already have are more often abused than used in the manner specified.

In much that is written and said upon the subject there is a great deal of what we would call wide talking. Certain set phrases and forms of speech have come into use with the woman's rights movement, and many women, and men too, use them without ever thinking whether they have any definite meaning or not, or whether, if the words do happen to clothe an idea, it is of the least practical consequence to the world. We will venture to say that scarcely one in twenty of the loudest talkers among them, could, if asked, state in plain common sense terms what they really do want, or give any very definite idea of the terrible wrongs they suffer, beyond what may be the result of their own ignorance or misuse of the rights they have. They believe they want more rights, they are not on an equality with men, their education is deficient, (a most sad and solemn truth) they are not "well developed" intellectually and physically, (another most melancholy and truthful confession) in short they are not what they ought to be, somebody must be to blame, man is somebody, therefore, man is to blame. This is the logic we have listened to and had spread out before us on sheets of innocent paper, that would, if it could, blush for the writers who would proclaim their own weakness and ignorance and then attempt to screen themselves from shame by throwing the blame upon others.

That women are lacking in educational training, and in intellectual and physical development, we freely and with sorrow acknowledge, but do not believe they can so easily rid themselves of all responsibility in the matter. We have no faith in scape goats. Men have sins and short comings enough to answer for without being charged with all of woman's also; and women, if they had half the faith in themselves that their actions prove them to have in man, would never think of so utterly disclaiming their own merits and ability, and endowing him with such almost omnipotent power. It is our candid opinion that if women are the poor, down-trodden, good-for-nothing creatures some of them profess to be, they have themselves to thank for it. Do not we see every day, nearly, that just as fast as they prove themselves worthy of a higher or more responsible rank in social life, just so fast they advance? As far as our observation goes, men who are men, are as ready to acknowledge true merit and ability in women as in their own sex, and quite as willing to aid them in turning that ability to some account as women are to claim the privilege of doing so. One, who evidently imagines herself a martyr to man's stupidity, exclaims with highly-emphasised indignation, "Why did not they (the men) educate us centuries ago as we ought to have been educated? then we should not have been the insignificant, degenerate, weak minded creatures we are, whose every effort at reform is met with derison. They have kept our rights from us and now laugh at us for suffering the consequences. But let them once give us our rights and we will soon show them on which side the laugh will be."

To the first part of this lady-like speech, we reply by asking, Why did not woman ask to be educated centuries ago? In all ages there have been individual instances of women highly educated, according to the standard of the times, and capable of exerting an important influence in national and social affairs; they were not "put down, ridiculed, despised," or thought to be out of their sphere, but on the contrary they were nearer being deified and worshipped; and we see no reason why all women might not have profited by the example of the few, then as well as now, except that their time was not come; the whole world, as it were, lay asleep on that subject, and we imagine that the stupidity was about equally divided between the sexes. That both are more thoroughly awakened now, should be a matter for mutual congratulation, but, instead, we find them quarreling like nursery children.

"Why did you not waken me sooner?" angrily asks one.

"Why did you not waken yourself?" retorts the other.

"But now that I am up you will not offer to dress me;" whines the spoiled pet.

"Dress yourself; that's the way I have to do," is the reply implied by the conduct of the opposite party.

So we would say to our correspondent above quoted '*Dress yourself.* Learn to use your own hands to some purpose, and your brains too. But let your garments, mentally and bodily, be modest, proper and becoming both to your sex and to your station in life. It is this senseless, aimless talk of things beyond your comprehension, and this aping to imitate what is and ever will be beyond your reach, that brings derision upon you.

If you wish to engage in any particular field of labor, prepare yourself for it. First learn what qualifications are necessary for the work, then see that you have them at command, and, having entered upon the work make a business of it. Above all things try to be sensible. Try to disabuse the public mind of the deeply-grounded idea of the instability and "flightiness" of woman's nature. That idea never originated without a cause, and woman's hand alone can remove that cause.

If you have a husband and family, thank God, and try to be contented. What "larger sphere" in life could you desire for the exercise of every faculty your Maker has given you? Your influence at home will react upon the world at large in a much more forcible way, and to much better purpose, than if you were to go from city to city proclaiming the weakness of your sex. We are all weak enough, and erring enough, Heaven knows, but we need more hearty, whole souled, loving labor at home, and fewer lamentations and broadcast denunciations in public—more work and less talk.

Now, Mrs. Y., since you ask to be advised, we will say plainly, do not attempt public lecturing. Unless you have a far better use of your tongue than you have of your pen, you are most assuredly, as you fear, one of the very class who will bring reproach and ridicule on the cause you wish to serve. Stay at home with your husband and your little son and make such a home for them as only a loving wife and mother can make; thus you will aid your "down-trodden sisters," as you call them, in a much more effective manner than you ever could by public speaking. You say very truly that we want better men and better laws. Well, it is in woman's power to make men better if she will, and, once the men are right, we fancy the good laws you plead for will come as a matter of course; "For a good tree cannot bring forth evil fruit, neither can a corrupt tree bring forth good fruit." Attend well to the little vineyard God has given you, before you attempt to trim and prune in the broad, rankly-grown wilderness of the world. You say the subject must be agitated—kept before the public, &c.; so it must, and so it will be; but there are abler pens than yours or ours already in that field, and we believe that mothers especially, should keep watchful tender care over the little home nurseries that are to furnish trees to bear the fruit of good or evil laws to future generations. Woman cannot unmake the past, but the future, both for herself and man, is, in a great measure, in her hands to make or mar. Let her train up good and virtuous law givers, and she will have little cause to complain of oppression or wrangle for her rights.

We must confess that some of our correspondents on this subject go quite beyond our depth in their choice of expressions. It almost takes away one's breath to master some of the sentences. We are overwhelmed with the solemn mysticisms about "developments of manhood in man," "developments of womanhood in woman," the "exercise of the Divine rights of being," and "woman's recognisance and acceptance of her individual, inherent womanhood." What does it all mean? anything, or nothing? Give us ideas that will make us forget the words they are clothed in, rather than smother thought with such meaningless phrases. Plain talk and plain, straight-forward, home work will do more towards accomplishing the "redemption of woman" than can be done by writing over quires of paper with such empty sounding words, or preaching them for years in pulpits and public places.

Our kind little friend is much mistaken if she imagines that we are "disclaiming against Woman's Rights" merely because we charitably gave old Mr. Fogy a chance to express his opinion on the subject. No, indeed; Mr. Fogy is not our law giver. Look again at our articles of belief, and you will see on which side of the question we stand. Our main point of difference seems to be that you will persist in making man the mortal enemy of woman, an antagonist who is to be fought, battled against, conquered, and made to submit, whereas we have no such idea whatever. We do not believe that man is woman's enemy, we do not believe he needs to be fought, and we *do* believe that the more you fight him the less he will submit! With love and labor and patience, women may rule the world.

We did intend to say something in this connection on the subject of women in business, but have already taken up too much room and must defer it to another time.

### Household Varieties.

*Henry Ward Beecher on the Hudson River.*—I am whirling along the Hudson, a river that never wears out any more than it runs out. If any other land has a more glorious river, I am glad of it! The ground is all disrobed of snow. Willows are yellowing the edges of low woods. Buds are making the forests look purplish. Grass is everywhere starting, and in favored spots it has lifted up that green which all summer long shall not wear out. The plow has already been at work.—Farmers are all astir. Barnyards are vocal with hens celebrating the earliest achievements in the egg speculations of another season. Calves and lambs are come. Ah, you do not know, poor creatures that live in cities,—you do not know that spring has come! But the signs of the year are for the country. Now the peony is pushing up its ruddy knuckles, honeysuckles are leering out, flags are drawing their swords, the swamps are full of blackbirds, wild duck are on the ponds, trout are ready for the angler, long wedge lines of wild geese stream northward, trumpeting as evening comes on, and they are weary winged.—Brook willows are downy with their velvety catkins—mosses in the damp woods are green with the cleanest, moistest, and intensest green. Streams are full and turbid, little ones are racing down into bigger ones, and these are pouring into other streams, and everything seems hurrying and hasting as if a universal activity had inspired the year!

*No hope for Printers.*—When Dr. Franklin's mother-in-law first discovered that the young man had a hankering for her daughter, that good lady said she did not know so well about giving her daughter to a printer; there were already two printing offices in the United States and she wasn't certain the country would support them. It was plain young Franklin would depend for his support upon the profits of a third, and this was rather a doubtful chance. If such an objection was urged to a would-be son-in-law when there were but two printing offices in the United States, how can a printer hope to get a wife now, when the present census shows the number to be 15,067.

*The last Ledger Story.*—The teacher of a district school in the neighborhood, is in the habit of questioning the children under his charge as to what they know of the various historical characters they happen to meet with in their books. A few months ago the name of Washington occurred in their morning lesson, and those who had anything to say about him were asked to raise their hands. Of course, up went all hands, and young America once more paid tribute to him "who was first, &c."

"He never told a lie," shouted one.

"Ate out of a tin plate, all through the war."

"Never smiled for nine years," cried a third.

"He was the father of his county," piped several.

"Edward Everett is getting money to buy his grave," and so forth.

"Now then," said the teacher, "who can tell me about Edward Everett?"

No hand was raised.

The teacher, somewhat surprised—

"Is there no one here that knows anything about Edward Everett?"

No hand up.

"Well, we will see what we can find out about Edward Everett, before to morrow."

P. M.—Before school opens, up runs a little girl in great excitement, as the teacher enters the school room.

"I know something about Edward Everett."

"Well, what is it?" says the teacher, eagerly.

"He writes for the New York Ledger!"

She had read it in nice large letters on the fence, as she went home.

Such is—FAME.—*Boston Investigator.*

*Disappointed.*—On the day after the inauguration of the Park monument, a souter's wife was heard giving vent to her ideas of the ceremony in the following strains: "Deed was I; I was at the 'nauguration, and sic a crood o' folk I never saw in Selkreik afore! I was 'maist crushed to death. But what was a' the work aboot? When they lifted up the claith, the fient a thing could I see to raise sic a steer aboot. Naething but a *stane man!*"

☞ Mrs. Louisa Hay Kerr, the Scottish traveler and author, is residing at Vienna. This lady, who has traveled in China, the East Indian Archipelago, Egypt, and other countries, is now occupied with archæological studies and investigations relative to the former history of the various Slavic races. She is a member of the Asiatic Societies of London and Paris, the Archæological Societies of Great Britain, Palestine, and Athens, of the Societie Geographique of Paris, and of several other learned Societies. It is understood that Mrs. Kerr intends again to visit Servia, with the view of publishing at a future period a large work on the subject of that country.

*The Irish Vice Royalty.*—The Dublin correspondent of the Liverpool *Journal*, says that Queen Victoria is in favor of making the Prince of Wales her representative in Ireland, and that it is highly probable that his Royal Highness will be Viceroy before the close of 1860. It is upwards of four centuries since a royal Prince filled the office of Lord Lieutenant.

☞ The Needlewoman's Friend Society of Boston has paid for women's work during the past year the sum of $3,000. One hundred women have been employed. The whole expenses of the Society are but $1,000 a year. Mrs. A. L. Wales is elected President for 1859.

☞ The following Missionaries have sailed from Boston for Calcutta: The Rev. C. W. Judd and wife, the Rev. J. W. Waugh and wife, the Rev. E. W. Parker and wife, the Rev. J. R. Downey and wife, and the Rev. J. M. Thoburn.

### The Mistress of a Family.

[Miss Mulock, in her admirable book, "A Woman's Thoughts about Women," writes thus in the chapter bearing the above title.]

"A man has no business to meddle in the management of the house. No business, except through hard necessity, or the saddest incompetency on the part of others, to poke over the weekly bills, and insist on knowing what candles are per pound, whether the washing is done at home or abroad, and what he is going to have for dinner. He who voluntarily and habitually interferes in these things must be a rather small-minded gentleman, uncommonly inconvenient to his family and servants. Perhaps to more than they: since a man who is always "muddling about" at home is rarely a great acquisition to the world outside.

I once heard a married lady say, with great glee and satisfaction: "Oh, Mr.——saves me all trouble in housekeeping; he orders dinner, and goes to the butcher's to choose it, too; pays all bills, and keeps the weekly accounts: he never wants me to do anything." Thought I privately, "My dear, if I were you I should be very much ashamed both of myself and Mr.——"

When a house boasts of both master and mistress, each should leave to the other the appointed work, and both qualify themselves rightly to fulfill the same, abstaining as much as possible from mutual interference. A man who can trust his wife or his housekeeper should no more meddle with her home concerns than she should pester him with questions about his business. No doubt, countless occasions will arise when he will be thankful and glad to take counsel with her in worldly cares; while she may have to remember all her life long, and never think of without a gush of gratitude and love, some season of sickness or affliction, when he filled his own place and hers too, ashamed of no womanish task, and neither irritated nor humiliated by ever such mean household cares.

A lady of my acquaintance gives it as her *sine qua non* of domestic felicity, that the "men of the family" should always be absent at least six hours in the day. And truly a mistress of a family, however strong her affection for the male members of it, cannot but acknowledge that this is a great boon. A house where "papa" or the "boys" are always "pottering about," popping in and out at all hours, everlastingly wanting something, or finding fault with something else, is a considerable trial to even feminine patience. And I beg to ask my sex generally—in confidence of course—if it is not the greatest comfort possible when, the masculine half of the family being cleared out for the day, the house settles down into regular work and orderly quietness until evening?

Also, it is good for them as well as for us, to have all the inevitable petty domestic "bothers" got over in their absence; to effect which ought to be one of the principal aims of the mistress of a family. Let them, if possible, return to a quiet smiling home, with all its small annoyances brushed away like the dust and cinders from the grate—which, *en passant*, is one of the first requisites to make a fireside look comfortable. It might be as well, too, if the master himself could contrive to leave the worldly mud of the day at the scraper outside his door; however, these chapters do not presume to lecture the lords of creation, I have nothing more to say on that score.

But she who, the minute an unfortunate man comes home, fastens upon him with a long tale of domestic grievances real or imagined—how the butcher will never bring the meat in time, and the baker keeps a false account of loaves—how she is sure cook is given to drink, and that Mary's "cousin" had his dinner off "our" mutton yesterday:—why, such a lady deserves all she gets: cold looks, sharp speeches, hasty plunges into the convenient newspaper; perhaps an angry cigar—a walk with no invitation for her company—or the club. Poor little woman! sitting crying over her lonely fire, not owning that she is wrong, but only that she is very unhappy, and very much ill-used, might one recommend to her notice one golden rule?—"Never pester a man with things that he cannot remedy and does not understand." Also, for her own benefit as well as his, a harmless rhyme, true enough of minor vexations, whatever it may be of the greater grief it so philosophically disposes of:

"For every evil under the sun
There is a remedy—or there's none:
If there is one, try and find it;
If there isn't, never mind it."

And when he comes in again, honest man! perhaps a little repentant, too, there is but one course of conduct which I recommend to all sensible women, viz: to put her arms round his neck, and—hold her tongue."

## Household Recipes.

**Best Lemon Pie.**

I send you a receipt for the best lemon pie it ever was my good fortune to taste: The juice and rind of one lemon, one cup of water, one teaspoonful of corn starch, one cup of sugar, one egg and a piece of butter the size of a small egg for one. Boil the water, wet the corn starch with a little cold water and stir it in: when it boils up pour it on the sugar and butter; after it cools add the egg and lemon; bake with an under and upper crust.—*Ex.*

**Charcoal for Burns.**

The Gazette Medicine of France says that by an accident, charcoal has been discovered to be a cure for burns. By laying a piece of cold charcoal upon a burn, the pain subsides immediately. By leaving the charcoal on one hour, the wound is healed, as has been demonstrated on several occasions. The remedy is cheap and simple, and certainly deserves a trial.

## For our Young Friends.

**Miscellaneous Enigma.**

I am composed of fourteen letters.
My 4, 6. 10, 12, 9, is necessary to all persons.
My 1, 5, 6, is a river in North Carolina.
My 6, 2, 7, 8, 3, is a river in France.
My 14, 5, 13, 11, 12, 8, is range of mountains in Turkey.
My 2, 10, 5, 6, 1, is a part of the body.
My 13, 12, 6, 11, is a singing bird.
My 2, 5, 6, 3, is an animal.
My whole was a hero of the Revolution.
*Greenfield.* S. J.

**Enigma.**

If you add to a river, two-thirds of a river,
And to these a preposition append,
An article of food that is deemed very good
Will greet the astonished eyes of my friend.
*Plymouth, April* 11, 1859. J. W. E.

Answer to Geographical Enigma in last number: GROVER AND BAKER'S FAMILY SEWING MACHINE.
Answer to Miscellaneous Enigma—CHARITY.

# MICHIGAN FARMER.

**R. F. JOHNSTONE, EDITOR.**

**Publication Office, 130 Jefferson Avenue.**

*DETROIT, MICHIGAN.*




## THE MARKETS.

### Flour and Meal.

It is argued by those who have paid attention to the subject, that we shall not probably have a large European demand for our breadstuffs for several years, from the fact that the several grain producing countries have entered upon a cycle of plenty, which for a period of years has been found to alternate with a cycle of famine, in terms of about five years each. The present fiscal year of the Government ends with June, and it is now known that the returns will show that a smaller quantity of breadstuffs have been exported for the past year from the United States, than for any year since 1849.

Up to 1846, the largest amount of wheat exported from the United States in any one year, was a little over eleven millions, and that only in 1840. The exports for other years ranging from two millions to eight millions. Since 1846, in some years the export has gone twenty-five and twenty-six millions, and in 1857, it went up to 33½ millions. This year it is calculated that the exports will not exceed ten millions. The grain is not wanted, and short as our crop was last year, it is going to prove more than we can get rid of before harvest, and we are likely to enter upon the next year with a larger surplus on hand than we have had for several years.

The London *Farmers' Magazine* observes: The breadth of wheat has been considerably diminished for the present year, the low prices there ruling so long as to direct the attention of growers, to an extended cultivation of malting barley and other spring crops. In the same journal is mentioned the fact that exports of wheat and flour have been made to the United States and Canada, and also that France has shown a disposition to advance rates, the supply being nearly exhausted at some of her principal ports. Spain, Portugal and Algeria are importing at present lightly, but these have generally been exporters.

So far as can be known, the crop of this State, and of those adjoining, at present seems very superior in appearance to what they have been for several years.—Should we have a full crop, even at low prices it will aid very much in rendering us independent.

The New York market, we note, is rather favorable than otherwise to the millers and wheat buyers. It seems to hold confidently. The prices quoted at the latest dates are $6.40@7.25 for the best western qualities of flour. Inferior sorts bring prices ranging from $5.25 @$6.00. The supply seems to be good. In Detroit the best extra ranges from $6.50@$6.62½; common brands at $6.25: although the demand is anything but encouraging to holders.

Wheat in this city is from $1.35@145. The supply, however, is very light. The mills are very quiet and do not seem anxious to do much at present rates. It must not be forgotten that it is yet full three months to harvest time.

Corn is more plenty, and we note that it is not held so firmly, nor are prices quoted so high as they have been. Sales of small lots are constantly being made on Canadian account, and for supply of southern counties, at 73 @75 cents.

Barley has been looking downward for some time.—Most of the brewers have stock enough on hand. Good samples can be bought at $1.25@1.30 per 100 lbs.

Feed stuffs are not quite so high as they have been, though still up to the outside of all that can be got for them. Bran is worth $16@17 per ton, and middlings bring $20@21, as per quality.

### Wool.

On last Thursday, there was what is called a great wool sale in New York. This sale had been advertised and puffed in every quarter as being a great leading regulator of prices. The parcels of fine wool were four in number and do not seem to have been esteemed as first rate in quality. The prices obtained were so unsatisfactory that many of the best parcels were withdrawn.—Much feeling seems to have been created amongst those who would have bought at the prices the wool would have been knocked down at; and there is a general feeling that these kind of sales do not settle anything. From the several accounts we have seen of this sale, we are led to the belief that whilst much of it was offered in good faith, there was much withdrawn. Most probably, from the fact of there being a combination among buyers to depress the rates, and to obtain certain parcels at low prices. That there is considerable wool in market, and held by speculators there can be no doubt; but it is also as plain that there may be on such occasions as this sale, combinations amongst those who want to buy as amongst those who want to sell. We regard this sale, therefore, as affecting prices, or the true value of wool neither one way nor the other, and that it should not be considered as any indication of want of firmness in the market. In fact the confidence of holders in high rates, is manifested by the withdrawal of their lots.

S. Folsom, of this city, has bought during the past week, lots amounting to 7,000 lbs., at prices ranging from 37 to 46 cents.

### Live Stock, &c.

The latest reports from the Albany cattle market state that the receipts for the week ending April 25th, were 1,100 more than last, but not equal to the corresponding week last year. The quality is fair, and prices rule very high; soles moderate. We quote prices:

| | |
|---|---|
| Premium | 6¾ |
| First quality | 5½@6 |
| Second do | 4¾@5¼ |
| Third do | 4¼@4¾ |
| Inferior do | 3½@4 |

There were sold 15 Michigan cattle at $96 per head, weight about 1,500; this lot was resold at $104 each; in this lot was one pair of 7-year-old Devons, fed by Arthur Powers, Wayne Co.. Michigan, which were very fine, and weighed 4,300 lb. Drummond & Palmer had among their lot a pair of oxen fed by Philip Vought of Ypsilanti, Michigan, which weighed at home 5,090 lb; would weigh about 4,770 lb here; they refused $350 for the pair.

Hogs—Hardly any in market, and sales dull. Sales of 76, averaging 178 lb each, at $6.15 ₱ 100 lb. One car load, averaging about 200 lb each, were held at 6¾, was offered 6¼c.; not sold.

The New York market reports, for the week ending April 27, are:

Receipts 3,510, being 693 head more than last week, and 170 head less than the average of last year. Prices are: for first quality, 11a11½c; medium, 9¾a10½c; ordinary, 9c; extra, 12a12½c. The general average of prices was 10c; majority of sales at 9¾a10½c.

We do not find any reports of cattle from Michigan in the New York markets of this week.

In this city there has not been much doing in the live stock line. W. Smith, of the Marine Meat Market, bought six prime cattle of U. Durham, Wayne Co., for 4½ per cwt, twenty sheep at $6 each of M. Seyeat, and ten hogs of Mr. Van Every, at $7 per cwt.

Potatoes—Good are higher; common, suitable for seed being freely at 48c, and Neshannocks at 61a61½c.

Beans—Dull at 70a75c. in street. Bolders ask considerably more.

Butter, moderate sales of roll at 20a22c. Firkin sells at 17a20.

Eggs, 11c. is a fair quotation.

Hay, pressed firm at $11.00. Loose brings $8.00a $9.50.